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ABSTRACT

Changing workplace practices in Canada's government workplaces were examined. The study analyzed 774 responses (response rate, 53%) to the 1998 Survey of Workplace Issues in Government, which was a survey of government managers in Nova Scotia, Ontario, Manitoba, and Alberta. The findings of five case studies were also considered. The survey results provided the systematic empirical evidence of how external pressures to "increase emphasis on results" and budget constraints have led some Canadian governments to change the way they organize work and adopt workplace practices such as measuring performance, increasing the volume of work, and divesting service delivery functions. Public managers were increasingly adopting flexible staffing practices and flexible job designs, which in turn meant greater emphasis on training and employee involvement policies. Compensation remained highly centralized, and workplaces remained highly unionized. Employed training increased slightly in all areas compared with 3 years earlier. The case studies provided concrete examples of changing work in government workplaces, including the move from direct service delivery to policy formulation and increasing emphasis on outputs and outcomes. Appendixes include 41 tables of detailed statistics and regression results and a summary of the case study findings. (Contains 18 figures and 41 references.) (MN)

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CHANGING GOVERNMENT WORKPLACES

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May 2001

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CHANGING GOVERNMENT WORKPLACES

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Prepared for

Canadian Policy Research Networks (CPRN)

Work Network

May 2001

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EXECUTIVE SUMMARY

The purpose of this study is to examine changing government workplace practices by linking external pressures that government workplaces face to changes in the nature of government work and to changes in workplace practices. Specifically, it aims to provide answers to the following questions:

- What changes are occurring in the government workplace?
- What is the extent of change, if any?
- Are the changes occurring uniformly across all governments and across different government functions or are the changes concentrated around certain types of work?
- Are changes in workplace practices driven by certain organizational (i.e., internal) and/or contextual (i.e., external) factors?
- What is the impact of these new practices on organizational outcomes?

The study is based on the Survey of Workplace Issues in Government (SWIG), a survey of government managers conducted in 1998 in the federal government and the governments of Nova Scotia, Ontario, Manitoba and Alberta, covering government departments and agencies. It also considers the findings of five case studies carried out in three of these jurisdictions.

SWIG consisted of a combination of a short telephone survey and a self-administered questionnaire, focusing on the work unit level. The size of the work unit was limited to between 5-100 employees. Non-proportional stratified probability sampling was used, with stratification based on "jurisdiction" to enable comparison across the surveyed governments by over-sampling in smaller jurisdictions (e.g., Nova Scotia) and under-sampling in the larger ones (e.g., federal government). 801 completed responses to the mail survey were received, amounting to a response rate of 53%. The study is based on 774 of these responses.

The results of our survey provide for the first time systematic empirical evidence on the extent of change in workplace practices in government. There is good evidence in this study to suggest that there is an important shift in the way some Canadian governments are organizing their work and the workplaces that accomplish their goals. The evidence points to a significant transformation of many government workplaces. This transformation is clearly underway but far from being complete. The results are indicative of the paradigm that is driving these changes. The contours of change are derived from, but not limited to, the collection of ideas known as New Public Management (NPM). A major indicator of NPM as a driving force is that managers identified "increased emphasis on results" as the most significant outside pressure on the work of their units.

Our analysis supports the view that many of the changes occurring in government work are driven by external priorities. There are signs of work intensification as well. These in turn have influenced the adoption of workplace practices: a move to measure performance, the increasing volume of work (and the related downsizing), the divestiture

of service delivery functions and the resulting rising concentration of knowledge work – measured by the percent of scientific and professional employees. Public managers have increasingly adopted flexible job designs that became popular in the private sector. It has meant greater emphasis on training and employee involvement policies. Comparison with data from similar questions asked in other private sector surveys points strongly to a workplace transformation within the government.

More detailed findings of the study show the following:

- The sampled units have on average 31 employees and are in existence for 12.5 years. More than 80% of the units operate in "core" government. The majority of the units carry out corporate services (40%) and services to the public (28%). The largest occupational group is scientific/professional workers (28%), followed by clerical workers (22%). Workplaces are highly unionized: on average 78% of the workers are represented by a union. The units have a long-serving workforce, as close to 60% of the workforce have more than 10 years seniority with government.[1]

- "Concern with results" is the number one *external pressure* identified by managers, followed by budget constraints. There are considerable differences among the responses of managers of different functional units regarding the importance of various pressures they faced, i.e., technological change affects corporate services units the most, while public accountability pressures are felt the most by service delivery units. Overall, service and citizen involvement issues still rank least among the pressures units face.

- The most widely used *methods for restructuring work* are downsizing (62 % of units reporting) and scaling back of operations (54%). Contracting out and devolution to other levels of government are not nearly as common, although our sample might under-report their incidence, as we survey work units that survived restructuring. Change in the nature of government work is pervasive. Only a small minority of workplaces (16%) has no change in either the content of work or in work methods. Our results also point to work intensification, as nearly 57% of the work units experienced an increase in work volume relative to the size of the workforce.

- *Managers* report a high level of *autonomy* in quality of services and client consultation issues, in performance management, training and development, and staffing decisions. These are areas, except for staffing decisions, where their autonomy also increased the most in the last three years. Managers of units "outside core" government experience more autonomy in compensation and in job classification and design, and have consistently larger increases in their autonomy in all surveyed areas than their "core" government counterparts in the last three years.

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[1] Due to the sampling methodology utilized, in analyses where the survey data would be run for multiple jurisdictions together it is necessary to use weights to restore the jurisdictional distribution of the sample to the jurisdictional distribution of the population. Additional "size of unit" weights are also applied in calculations where the unit of analysis is the individual employee and not the work unit.

- Our survey results confirm that *measuring performance* of various government functions is extremely difficult. Despite heavy pressure for measuring results, only half of the workplaces use any kind of performance measures. In addition, approximately 60% of units measure the costs of their services, while only 34% measure the benefits of services. 30% of the units measure both costs and benefits. As expected, policy units are the least able to measure their performance, while units providing services to the public use formal performance measures the most. Work unit performance increased the most regarding efficiency/productivity, and somewhat less in terms of quality and on-time delivery. Overall, the use of performance measures at the work unit level is positively associated with the amount of outside pressure for measuring results and the ease with which those results could be measured.

- In order to adjust to the outside environmental pressures and to changes in the nature and volume of work, work units most often turn to various *flexible staffing practices*, most notably flexible working hours, functional flexibility, and increased overtime. All of these practices build on the existing workforce, responding both to possible increases and contractions in the volume of work. They also provide more flexibility, choice and variety of work and working hours, both for management and workers. In contrast, different methods of employment reduction have been utilized significantly less. The differences in the constraints various functional units contended with are instrumental in the units' use of various staffing practices.

- Government workplaces use various *flexible job design mechanisms* – multi-skilling, job enrichment, and job enlargement – extensively. Leading practices are job enrichment and job enlargement, applied at 70% of the units. The incidence of flexible job designs in the government sector is triple that reported for the private sector in Canada.[2] Employee participation in these practices also has increased in the last three years. Flexible job design practices are more often found in work units with a higher volume of work, measurable outputs and outcomes, a high level of local managerial autonomy, and self-directed work teams. In turn, autonomous work teams are most likely to be found at workplaces with greater budgetary constraints and public accountability pressures, at service delivery units, and in workplaces with a high percentage of scientific and professional employees.

- Regarding *employee involvement and participation*, direct information sharing with employees is the most prevalent form, with more than 80% of the work units adopting it. Quality issues are most likely to be discussed with employees early on, while budgets, workforce reduction, and changes in organizational structure are discussed at later stages. Direct information sharing with employees has been linked positively with the severity of budget constraints experienced by the work unit, the amount of

[2] The private sector data is based on the Human Resource Practices Survey (HRPS), which was carried out in 1993 by Canadian Facts. HRPS covered four sectors: wood products, fabricated metal products, electrical and electronic products and selected business services. The results of HRPS are reported in Betcherman, et al.(1994)

managerial and supervisory training provided, and the use of quality circles and self-directed work teams. 40% of the units utilize quality circles. Units with intense public pressures resort more to quality circles, which are also employed more often among scientific and professional workers.

- *Compensation* is still highly centralized in government. Merit increases for managers and non-managers are adopted at around half of the workplaces. Bonuses for managers are used in 39% of the units, for non-managers in only 11% of the units. Knowledge/skill-based pay is applied only sparsely, although it might logically accompany the use of job enrichment and multi-skilling. Performance pay for managers – including merit increases and bonuses – is associated with policy units, work units with high level of managerial autonomy, and lower unionization rates. Compensating time-off is highly popular – 71% of units use it for non-managers and 57% for managers – providing some flexibility without the use of extra budgetary resources.

- Managers feel that the most important *skills* required from their employees to carry out their jobs effectively are problem solving and team skills, and more generally the ability to learn new skills. *Training* of employees increased slightly in all areas compared to three years ago. On average, 68% of the employees receive training. Computer and other office equipment training is provided almost universally, while more than 90% of the units report professional and technical training. The employees themselves initiate almost 1/3 of all training. Training activities at the workplace are positively related to the extent of union involvement in training decisions, to being in "core" government, and to the use of various flexible job design mechanisms at the workplace.

- Government workplaces are very highly unionized. *Unionization* is the highest in units delivering services to the public (85%) and lowest in regulatory units (71%). There are significant difference between unionization in "core" government units (82%) and units "outside core" government (57%). Union involvement at the work unit is minimal. Meetings with management are ad hoc, and there are no joint union/management initiatives operating at the workplace level. While managers report that they have an excellent relationship with their union counterparts at the workplace level, they also feel that it is determined by union/management relations at a centralized level. Service delivery units have the most union involvement of all government units. The extent of union involvement is positively associated with the severity of budget constraints.

- Future challenges identified by managers include several issues, such as employee burnout and fatigue, loss of experience and corporate memory, employee morale, and hiring and staffing.

- Results of multiple regression analyses show a strong support for the model which was used to develop the survey, linking external pressures to changing government work and those, in turn, to workplace practices. External factors such as budget

constraints, public accountability pressures and shifting government priorities have a significant impact on the adoption of innovative workplace practices. Contextual factors such as work unit size, autonomy, technological change, and the level of unionization also influence the choice of workplace practices. The changing nature of government work has its own impact. Whether the work unit was a "core" government operation or a service delivery unit appeared to make a difference. Volume of work, measurability of work, and knowledge content of work performed were significant factors as well.

- Five case studies were also conducted in a separate but related part of this study. They provide qualitative assessment of leading-edge change within government workplaces and complement the survey data. These case studies provide concrete examples of changing work in government workplaces, such as the move from direct service delivery to policy formulation and increasing emphasis on outputs and outcomes. They provide a more detailed account of the new skill requirements, which include contract management, performance measurement, communication, negotiation, team, and leadership skills. A trend of moving to a more highly skilled, albeit much smaller, core government workforce is also made evident, as well as the increased use of flexible job design mechanisms. Compensation is the area that is changing the least, mainly because of the centralized nature of collective bargaining. At all sites except one, restructuring resulted in significant employment reduction. Unions' role has been limited to ensuring that due processes were followed in downsizing. The formalized union/management relationship is almost non-existent at the workplace level.

I. INTRODUCTION

The 1990s saw governments redefine their role in fulfilling their mandate in many Canadian jurisdictions. Many services that once formed part of the government were moved outside the government. Other operations were retained but delivered very differently, often with the aid of new technology. By the end of the decade government work was considerably different compared to what it was at the beginning of the decade.

As a result, the nature of the government workplace began to undergo many changes as well. New innovative[3] methods and policies have been and are being adopted that many people claim enhance both quality and productivity. At the same time, many of these changes lead to fewer jobs that may be better paid but may need enhanced skills, and in many cases, completely new skills.

These rapid changes may be seen as a response to the challenges posed by external forces (free trade, technological change, etc.). The operating efficiency (or effectiveness) of government workplaces is of significant interest to policymakers as well as other stakeholders in the operation of the government (i.e., the public, the government workers, the suppliers, etc.). At a macro-level the operative efficiency may be seen as an input into national productivity. An inefficient government would eventually limit the ability of the rest of the economy to make productivity and other gains. At a disaggregate workplace level, the adoption of innovative workplace practices can give the government the ability to do more with less. More and better quality services can be provided without adding to a less efficient bureaucracy.

Many of these and other similar ideas have been discussed, dissected and tried out in the private sector (especially in manufacturing) in the 1980s and the 1990s. The threat of foreign competition, the flexibility of new technologies and deregulation were often cited as the reasons for the private sector's search for a more efficient paradigm. There is

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[3] The term "innovative" is used in a general way to refer to non-traditional work practices that were being gradually introduced into government workplaces.

considerable evidence gathered from more than fifteen years of empirical research to point strongly to a new paradigm in workplace practices. It is referred to variously as 'high commitment work system', 'high performance work system' or 'lean production'. The essence of the new work system is that work is organized in a way to allow front-line employees to participate in the decisions regarding changes in work routines. A very recent, penetrating work that summarizes the literature on private sector workplace innovations describes the new work system thus: "This generally involves changes in the job design, towards greater complexity, higher skill levels and greater use of team-working, as well as increased delegation of responsibility to lower level staff and improved communications throughout the company" (OECD, 1999: 179). This 'high commitment' work system often includes contingent forms of compensation as well. It has been well established that the new work practices lead to increased economic performance of the organizations adopting them (Ichniowski et. al, 1996). These systems were developed, with only a few exceptions, in the production setting. This paradigm may, therefore, be most applicable in production or production-like processes.

As government workplaces faced a set of demands comparable (or analogous) to the ones experienced by the private sector, a number of questions regarding the transition arose:

1. What changes are occurring in the workplace? Which practices are being changed or eliminated? Which new practices are being adopted?
2. What is the extent of change, if any? Are the changes occurring uniformly across all governments and across different government functions or are the changes concentrated around certain types of work?
3. How do these changes compare with changes observed in the private sector or in other countries?
4. Are changes in workplace practices driven by certain organizational (i.e., internal) and/or contextual (i.e., external) factors?
5. What is the impact of these new practices on organizational outcomes? In other words, what is the evidence of the efficacy of these new and innovative work practices?

These concerns lie at the centre of this study. Not all of them can be addressed fully in a single study. Yet our attempt has been to obtain an initial assessment of each of these issues through two complementary methods: a large-scale survey of government establishments, and in-depth case studies of selected government units where substantial changes in the nature of work and corresponding changes in workplace practices have taken place.

Questions 1, 2 and 4 form the bulk of this report. A full treatment of Question 3 is held to be outside the scope of this study. Our literature review, however, does refer to similar studies conducted in the private sector, wherever appropriate. Question 5 could not be addressed within the data collection framework of the establishment survey or the case studies. It needs its own separate and specialized treatment. Thus, what follows in the rest of this report is the presentation of a conceptual framework (Section II), methodology (Section III), and results of the survey in five major areas: environmental pressures (Section IV), changing nature of government work (Section V), human resource management practices (Section VI), union/management relations (Section VII), and future challenges (Section VIII). Summary of results (Section IX), and a discussion and implications section (Section X) round out the presentation at the end.

While they are important, the questions posed above do not fully capture the larger implications of workplace reform in the public sector. For example, innovative workplace practices do not merely figure prominently in any debate over operative efficiency; they also redefine the required skill-set for all future employees. Workplace reforms, if managed well, can create better jobs that are more involving, safer and more challenging than the traditional job in a well-practiced bureaucracy. In many government departments, workplace reform means no less a transformation than the much-touted private sector transition from routine production work to knowledge work. At the same time, the shift to employing more knowledge-based workers may also lead to workplace change, since these workers demand more autonomy, flexibility and involvement in decision-making.

The implications of workplace reform in the government, therefore, extend to a larger set of policy issues. Even though the foregoing questions are not directly addressed within the design of this study, our findings shed some light on them. The implications of our results for these questions are discussed in the last section.

II. CONCEPTUAL FRAMEWORK

II.1 Pressures for Change

A number of factors have compelled Canadian governments in the 1990s to change how they operate. These include: increasing global competition, pressures to control mounting government deficits and debts, the impact of technological advances, changing public expectations of the government's role and the quality of public services, and an ideological shift advocating a diminished role for government. We will briefly discuss these pressures in this section.

Increased international competition has raised competitive standards for the efficiency of national economies. National economic efficiency is dependent on the efficiency of both the private and public sectors. Improving public management is an integral part of the structural adjustment needed for better economic performance in a changing global environment. An inefficient government limits the ability of the rest of the economy to make productivity and other gains.

Charih and Daniels (1997) argue that globalization significantly reduces the power of the nation state to regulate the economy and society, while it increases the power of international organizations, multinational corporations, regional interests, and pressure groups. At the same time, significant shifts have taken place regarding the desired role of the state in the economy and society. The ever-increasing state "intervention" experienced from the start of WWII has been replaced in the 1990s by an increasingly facilitative role whereby government acts as an agent or broker that forges partnerships between private and the public sector organizations.

According to Swimmer (2000), large deficits and debts were a serious problem for both the Canadian federal government and the provincial governments in the early 1990s, partly due to the impact of the 1990-91 recession. Most provinces' deficit more than doubled between 1991and 1993, and on average reached 3.3% of provincial GDP. Debt

levels became an even graver problem, as the average provincial debt reached 37% of the GDP by the mid-1990s, while the federal debt increased to 70% of GDP. Beginning in the 1980s and intensifying in the 1990s, global financial institutions and domestic public opinion have exerted pressure to control government spending and balance budgets. Governments were forced to restrict the scope and nature of their activities. However, as deficits and debts are successfully reduced this pressure eases.

The emergence of the global knowledge-based economy, which was built on extensive technological changes and corresponding organizational restructurings, also had significant implications for the day-to-day operations of both the private and public sectors. New technologies which are central to government activities, especially new information and communication technologies, significantly alter what government does and how it does it. Borins (1995b) contends that the explosion of cheaper information technology allows for a greater labour-to-capital substitution ratio. This makes information readily available throughout the organization, and undermining the traditional "economies of scale" arguments supporting bureaucratic organizations and practices. The new technologies enable the disaggregation of bureaucratic structures and the decentralization of management systems without loss of central control. These new technologies facilitate the introduction of new forms of service delivery – shown, for example, in the proliferation of alternative service delivery mechanisms in Canada. According to Charih and Daniels (1997), new information technologies might also change the policy making process by creating new media and forums for public participation in the design and delivery of public services. New technologies require new skills from workers and managers while making others obsolete, they call for new management approaches and allow for new, more flexible workplace arrangements.

In today's economic environment, private sector customers are accustomed to a high quality of services and extensive choice. Citizens expect the same from public service providers. They demand "value for their money," and request a greater role in the design and delivery of public services, which are funded by their money.

II.2 Trends in Public Management

These environmental pressures placed under close scrutiny the effectiveness of the old "bureaucratic" model of government. The emphasis shifted to the three Es: economy, efficiency, and effectiveness of public services; and, starting in the early 1980s, a reform movement to change public sector practices known as New Public Management (NPM) took root in many OECD countries. Followers of NPM advocate for a minimalist state, the elimination of the deficit and red tape, balanced budgets, effective management, and increased competition in providing quality services to increase client satisfaction. "Management" of people, resources, and programs replaces "administration" of activities, procedures, and regulations. "Managerialism," unlike "administration," is concerned with "results," "performance" and outcomes." The focus shifted from "policy-making" to "management," from "process accountability" to "accountability based on results" (Charih and Rouillard, 1997). NPM also builds on current private sector management practices and value sets, such as entrepreneurship, flexibility, results-orientation, innovation, focus on client needs, quality of services, and continuous learning. NPM is a major paradigm shift where the old "bureaucratic" paradigm is replaced by the new "post-bureaucratic" paradigm (Barzelay, 1992, Denhardt, 1993).

The OECD (1994) uses two broad categories to describe the reform trends in public management. Their first category includes attempts to adjust the size and structure of the public sector by making it leaner, less centralized, and providing for more choice, by limiting the size of government, privatization, commercialization of public bodies, devolution, and the use of market-type mechanisms. The second category includes efforts to improve public sector management by enhancing effectiveness of financial, personnel, performance and regulatory management functions. Doeringer, Watts, Kaboolian and Watkins (1996) distinguish four major strategies for radically altering the provision of government services: (1) privatization, (2) downsizing, (3) devolution of responsibilities to lower levels of government, and (4) efficiency improvements. Kernaghan (1997) distinguishes three major components of NPM, "...the reduction of government activities by such means as privatization and contracting out; the creation of

new forms of organizations such as service agencies; and the adoption and adaptation of new approaches to management, such as empowerment."

Pollitt (1993, 1998) argues that "managerialism" in the public sector underwent changes over time. While in the 1980s the emphasis was on economy and efficiency, in the 1990s that has been replaced by a more balanced approach that also stresses quality of services, standards, and empowerment of front-line workers. He differentiates the harder "market-oriented" model, more exclusively founded on neo-classical microeconomics, from the softer "relational" post-bureaucratic model.

However, there is no universal agreement on the changes embodied by NPM. Denhardt (1993) emphasizes the fundamental difference between the private and the public sectors and does not see a place for competition, markets, and market-like mechanisms in the public service. Savoie (1995) attacks the conviction that bureaucracy is broken and that private sector management solutions are superior to public sector ones. He argues that the extreme visibility of the public sector's work, the low tolerance for mistakes and the overarching ministerial responsibility and accountability of every aspect of government operations require different solutions in the public sector. Pollitt (1995), examining the implementation of NPM in Great Britain, points to problems in effectively implementing performance measurements, service standards and contracts between service providers and government.

Empirically, there is mounting evidence that many aspects of NPM have had a broad following across many governments. Borins (1994, 1995) uses studies of award-winning cases from a number of sources (e.g., the Institute of Public Administration of Canada's innovative public management competition, the state and local government innovation programs of the Ford Foundation and the Kennedy School of Government) to describe common threads in public sector turnarounds. These turnarounds include: exposed organizational failure; new leaders with long-term commitments to the organization; organizational change processes, including changes in "philosophy," mission statement, and strategic plan; changes in organizational governance; work reorganizations to

improve client service, staff commitment and morale; reintegration of service; increased training and skills development; improved technology; workplaces with high employee involvement; and outreach to clients.

Barzelay reports (1992) that, in order to change from performing a set of technical functions to providing unified service to a segment of the customer base, the Minnesota government introduced cross-training, situational judgment training, work re-design, and reorganization. Giving more power to front-line employees requires increased allowance for exercising judgment, which in turn fosters sharing in a wider group knowledge, philosophy, authority and decision-making.

Utilizing surveys and case studies, the OECD (1996) reviewed the major human resource management reform trends in central governments of all its member countries. The OECD survey asked officials of central organizations charged with human resource responsibilities about the use of different workplace practices. The most common practices found were the flattening of organizational structures, reorganization of work, and providing training and development; less progress was made in the introduction of flexible pay and grading systems. They argue that decentralization and devolution of human resource management is instrumental in shifting from a rule-bound culture to a performance-based system. The advantages of decentralization are in creating greater diversity of practices, better recruitment and training, increased responsibility and accountability, sharper focus on efficiency and effectiveness, and the provision of better services. They also report negative effects on employee morale and productivity resulting from staff reductions.

As indicated in the introduction, changes in workplace practices in government are not happening in a vacuum. Workplaces in the private sector have been undergoing fundamental changes as well. The developments in the public sector loosely correspond to the leading-edge practices in the private sector. A key area where this can be seen clearly is in knowledge-intensification of work. It may be argued that an NPM-style transformation of government renders the remaining work more knowledge-intensive

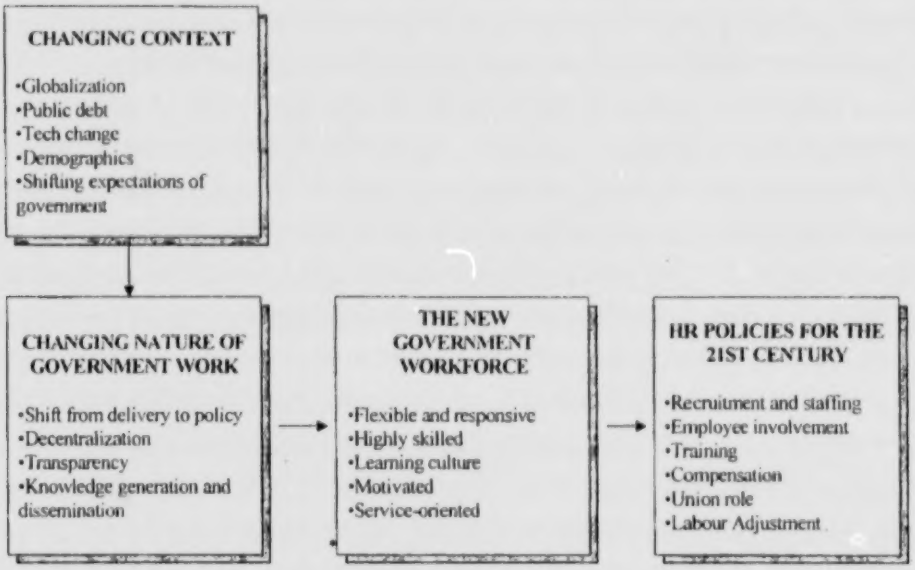
than the traditional role in which governments are involved in more labour-intensive, production-like service delivery and administrative functions. It has been argued by many theorists that knowledge-intensive organizations have become learning organizations (Senge 1990). This basic idea has led to a conceptualization of knowledge creation as work (Jacques 2000).

This trend is arguably an even stronger influence on the transformation of government work than the need to obtain efficiencies in operations. Many government agencies (or former government agencies) are now exploiting their specialized knowledge to create new value-added services. In Section IX.1, we outline the case of the Technical Standards and Safety Agency of Ontario that is mining its knowledge to enter new businesses – an activity which would have been difficult to operationalize without the concept of mining intellectual capital. It is important, therefore, to recognize that government work is inevitably moving towards becoming more knowledge-intensive. This trend is also contributing to workplace change by emphasizing learning, creativity, knowledge creation and the need to exploit the intellectual wealth of these organizations to create more value-added services.

II.3 Model of Change in the Government sector

Based on the foregoing discussion we built this study on a model of change developed for the government sector (Betcherman and Verma, 1996). This model posits that external factors – such as the need for spending reductions, technological innovations, demographic changes, and shifting expectations of the public – are forcing governments to rethink what they do and how they do it. As a result, the nature of government work is changing, and it is characterized by: an increased emphasis on the quality of services; a shift away from government delivery of services to government control of service outputs – e.g., control of the activities of service providers – and outcomes, focusing on results; increased autonomy of service providers and greater transparency of their work; and renewed emphasis on knowledge generation and dissemination.

Figure 1.
Model of Change in the Government Sector



The changing nature of government work, in turn, requires workers with new skills and the adoption of new workplace practices. Government employees need to become more service-oriented and more flexible. They need to adapt to rapidly-changing technology, and to become more highly skilled and multi-skilled. The move from direct service delivery to the control of outputs and outcomes requires people with different skills: people who can develop guidelines to enable decentralization in decision-making, and who are familiar with performance measures and other methods of control. New workplace practices in government may encompass new forms of employee involvement, more information sharing with employees, greater reliance on teamwork, increased employee training, multi-skilling, job enlargement, job enrichment, and the introduction of new compensation practices, such as pay for performance (see Figure 1).

These changes also create a challenge for the unions representing government employees. Most urgently, unions are confronted with the labour adjustment consequences of government restructuring, in the laying-off of their members. Their utmost concern in this case is to try to prevent downsizing, and in case it does happen to ensure that due process is followed. At the same time, they might be presented with the opportunity to participate more actively in restructuring decisions, gaining more knowledge about the future direction of work in government and the impact it will have on their members.

The framework presented above (Figure 1) has been used to guide the design of the establishment survey and to analyze the data obtained from the survey. After a brief section describing the methodology employed in data collection, the next few Sections will report the main results of the survey.

III. METHODOLOGY

III.1 Research Design

This study is based on the Survey of Workplace Issues in Government (SWIG), a survey of government managers carried out in five Canadian jurisdictions. It also considers the findings of five case studies carried out in three of these jurisdictions.

SWIG covers the following five jurisdictions: the federal government and the four provincial governments of Nova Scotia, Ontario, Manitoba and Alberta. These governments sponsored the research, together with the Public Service Alliance of Canada (PSAC). Information was collected from government departments, i.e., ministries and government agencies, including Crown corporations, special agencies and special operating units.

SWIG was administered in two steps. The first step consisted of a telephone survey used for collecting some fundamental information. The purpose of the telephone interview was to establish the size of each unit and collect other basic information regarding the nature of work performed by the unit, the length of time the unit was in existence, and the length of time that the manager had held that position.

The second part consisted of a self-administered mail-out questionnaire to gather detailed information about workplace practices in each workplace. This mail survey collected data on the current situation of the work unit and also asked managers to compare that to conditions three years previously. Topics covered in the mail survey include characteristics of the work unit, external pressures faced by the unit, changes in the nature of work, human resource management practices – such as managerial autonomy, performance measurement, staffing practices, skill requirements and training, flexible work design practices, employee involvement, compensation, flexible work arrangements and union/management relations.

Ekos Research Associates were retained to administer the survey, including pre-testing, data collection, and post-survey data entry and verification.

SWIG was focused at the work unit level, a level at which workplace practices and changes can be observed directly and accurately. At this level the distinct workplace culture that makes each workplace unique can be detected. The reporting (or sampling) unit was defined as a unit of employees generally reporting to a "manager."[4] The principal respondents to the survey were these "managers."

The decision on the unit of analysis for SWIG was based on several considerations. In the private sector, workplace surveys are carried out at the establishment level. However, the definition of "establishment" often varies from survey to survey. In their comprehensive study on surveying establishments, Hunter and Frits (1995) advocate for surveys that aim at mapping workplace practices, seeking out respondents who know what is actually happening at the workplace level. They advise against surveying human resource generalists or CEOs, as they consider them to be quite removed from the day-to-day operations of the workplace. Our major guiding principle in deciding the unit of analysis was to obtain responses that adequately capture workplace practices at government workplaces. "Establishment" in government could be defined at a very aggregate level, e.g., at the level of a department, which was used in the Price Waterhouse Cranfield surveys in the EEC study (Brewster et.al, 1994), at division-level, or at a more disaggregate level, such as "branches." As different workplace policies and implementation decisions are made at different levels (e.g., compensation policies are set centrally at the government level, while flexible job designs are often decided at the branch level), we aimed at an organizational level, where all workplace practices and changes can be observed relatively easily, and variation in practices can be detected. Our unit of analysis also enables us to compare organizational changes for different types of government work, such as policy, service delivery, and corporate functions. Policy units

[4] The name of these managers differed from jurisdiction to jurisdiction and even within each jurisdiction. Most of them were called "directors." In the Ontario Government a Director is generally the head of an operating unit. Our sampling and screening procedure identified such people by asking questions about the number of employees they manage, rather then by their title.

have as their major client the Minister, and they have two major functions: preparing the Minister for dealings with the legislature and the public, and developing policy directions pertaining to the portfolio of the department/ministry. Service delivery units have as their major client the public; they deliver services directly to the public, e.g., issuing license plates. Corporate services units provide services to other government units; for example, the human resources management unit helps other units in the department/ministry with the hiring process, it deals with pay and benefit issues for all units, etc.

The size of the work unit was limited to between 5-100 employees, measured in full-time equivalents (FTEs). FTE was selected as the information managers could most easily and accurately recall in a telephone interview. In retrospect, it would have been more appropriate to screen on the basis of body count, since the absolute number of people in the unit was a key organizing principle. Especially in the case of units with lot of non-standard workers, using the body count as the determinant of size meant that, in a number of cases, the number of employees exceeded 100 – in some cases by a wide margin. It was considered too difficult and onerous for managers to respond to detailed questions about larger units of employees. This was a conclusion drawn from a pre-test of the questionnaire conducted prior to data collection. On the other hand, workplace practices at units with less than five employees were considered informal and atypical. In cases where the director contacted was responsible for a larger or smaller unit than the study criteria had set, the manager directly above or below the initially sampled manager in the hierarchical structure was chosen instead.

In addition to the sampling unit criterion, all units where a manager was in the position for less than 6 months were excluded on the rationale that they did not have sufficient experience to assess trends in workplace practices. In these cases, if another manager who was in a position to provide a longer-term view on the sampled unit could be found, this person was interviewed instead. In other cases, the sample unit was dropped from the study entirely.

The sampling frame was compiled based on the Cornerstone List of Managers, a commercially available list of government managers. The list is updated quarterly with information provided by all federal, provincial and territorial governments across Canada, and is considered fairly accurate. Attempts to develop a sampling frame based on an up-to-date list of government directors supplied by each participating government were not successful.

In terms of sampling methodology, non-proportional stratified probability sampling was used. Stratification was based on "jurisdiction," as it was considered important to collect information which would allow comparison of practices across the surveyed jurisdictions. To enable those inter-jurisdictional comparisons, it was necessary to over-sample in the smaller jurisdictions (e.g., Nova Scotia) and under-sample in the larger ones (e.g., the federal government).[5]

The telephone component of the data collection for the provincial portion of the sample was conducted between early May and early June 1998. The federal portion of the sample was carried out in December 1998 and January 1999. All managers initially sampled were sent an introductory letter on government letterhead, either by fax or in the mail, informing them of the study's objectives and the methodology for collecting information. Once the telephone contact began, over 500 copies of the introductory letter were also sent to potential respondents by fax in the event that they had not seen the earlier letter or had misplaced it. Extensive use was also made of the toll-free telephone number to respond to questions about the legitimacy of the survey and to arrange appointments with respondents. After three unsuccessful attempts to reach a respondent a detailed message was left so the respondent could call back when convenient.

[5] Due to this sampling method, it is necessary to use weights in analyses where the survey data would be run for multiple jurisdictions together. The survey was weighted according to the proportion of managers in each jurisdiction. When looking at results by jurisdiction, the weighting variable should not be applied since it serves to weight each province down to its proportionately smaller size compared to the federal government, thereby increasing the margin of error for cases within these jurisdictions.

Table 1 shows a detailed breakdown of telephone contacts made during the telephone phase of the survey (Appendix A includes all tables containing descriptive statistics). Results are divided broadly into federal and provincial. Provincial cases, however, cannot be broken down any further, since detailed information about jurisdictions was not retained in the telephone survey file where a case was referred to another manager above or below the person contacted initially. Those managers listed as unavailable include respondents who were on leave or who, for whatever reason, would be unreachable for the duration of the study. Cases where a referral was made to another manager were treated as new sample units. The total number of respondents invited to participate can be broken into refusals and cooperative contacts (including those who completed the interview and those turned away by the survey team, because of the criteria imposed on the study). The disqualified respondents are included in the response rate calculation, which is based on the number of cooperative contacts out of the total functional sample (not including attrition). The response rate to the telephone portion of the survey was 68% in the federal jurisdiction and 60% in the provincial jurisdictions.

Within two weeks of completing contacts with managers through the telephone portion of the survey, self-administered questionnaires were mailed out to respondents. Each package included a covering letter on Canadian Policy Research Networks letterhead, an instruction sheet for filling out the questionnaire form, and a toll-free telephone number at Ekos Research that respondents could call with any questions or clarifications regarding the questionnaire. Respondents were also sent a postage-paid, self-addressed envelope in which to return their completed questionnaires.

There were very few calls about interpreting a question or filling out the form. Some individuals did call, however, to express a point of view about the study or to ask about study results. Requests for replacement forms also came in on the toll-free line. A reminder card was sent to all respondents within two to four weeks of the initial mail-out to boost response rates.

Table 2 shows response rates by jurisdiction for the self-administered (mail out) portion of the survey. The overall response rate to the mail portion of the survey was 53%.

Data from the self-administered mail survey were merged with the telephone data in an SPSS file. We are confident that the survey results are representative of all work units in the five participating jurisdictions, given that all managers of units of 5-100 people work included in the survey in the four provinces, and a sample of about half the managers at the federal level were included at the telephone contact stage.

There are certain limitations about the data that is necessary to highlight. First of all, the units surveyed are the "survivors" of various government restructuring efforts. As a result, some of the restructuring activities SWIG inquire about – such as privatization/contracting out and devolution – might be under-reported in our sample, as units that got completely eliminated due to restructuring are excluded from our sample.

Some might also question the rigour in measuring the adoption of the various work innovations. SWIG collected information on both the breath and depth of adoption. However, considering the difficulty of providing exact percentage figures for employees participating in these programs, SWIG asked managers to indicate the number within ranges. In addition, SWIG also inquired about the change in the adoption of these practices compared to three years ago. For managers who were not on the job for three years, the comparison related to the starting date on the job.

Additionally, a large number of measurements in SWIG were made on Likert-type scales going from 1 to 7, where 1 represents the low end of the scale and 7 indicates the high-end. We present almost all results for these scales as the mean on this 7-point scale. This not only facilitates comparing responses across different items, it also shows whether the responses are on the low end of high end of the scale.

III.2 Sample Profile

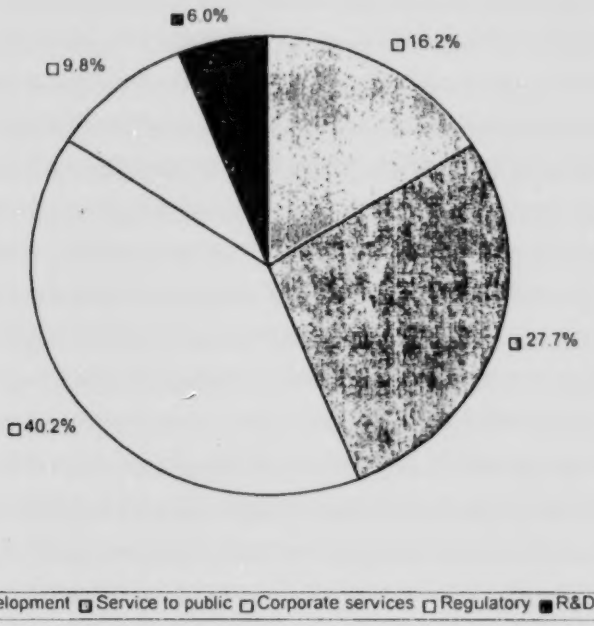
As reported in the previous chapter, 801 completed responses to the mail survey were received. Of these 801 responses the data analysis in this report is based on 774 responses. Altogether 27 cases were removed from the database for the following reasons: 6 cases did not represent typical government organizations (e.g., responses from Sydney Steel Corp, VIA Rail, CBC); 14 cases reported units with less than 5 employees; another 7 cases units reported more than 143 employees. Even though the original survey design called for units with 5-100 employees we kept units with 101-143 employees in the sample because in full-time equivalents many of them would be close to the 100 limit.[6]

In the final data-set 44.8 % of the respondents are from the federal jurisdiction, 15.6% from Ontario, 15.2% from Alberta, 12.5% from Manitoba, and 11.8% from Nova Scotia. The unweighted jurisdictional distribution of the sample reflects the non-proportional stratified sampling design that was utilized in order to achieve a certain minimum number of cases from the smaller jurisdictions. Further data description and analysis is based on weighted data, which restores the jurisdictional distribution of the sample to the jurisdictional distribution of the population.

In the telephone portion of the survey respondents were asked to identify the primary activity of their work unit.[7] Most of the units surveyed are corporate services units (40.2%) (Figure 2). Their high share might be explained by the broad definition of corporate services, which includes finance/administration; human resources/personnel/ training; communications; marketing; public relations services; and services to other government departments, such as information technology.

[6] The limit of 143 is within 3 standard deviations from the mean.
[7] Very few respondents selected the other category, and after careful review of all the information provided about the units they were recoded into the five main categories.

Figure 2.
Distribution of Surveyed Units by Function



Units referred to as "corporate services" in government departments seldom include functions such as communications, marketing, public relations, or information technology. Service to the public is the second largest primary function of the units identified by 27.7% of the respondents, followed by policy development (16.2%) and regulatory activities (9.8%). Finally, research and development/scientific activities are the primary activity of 6% of the units surveyed.

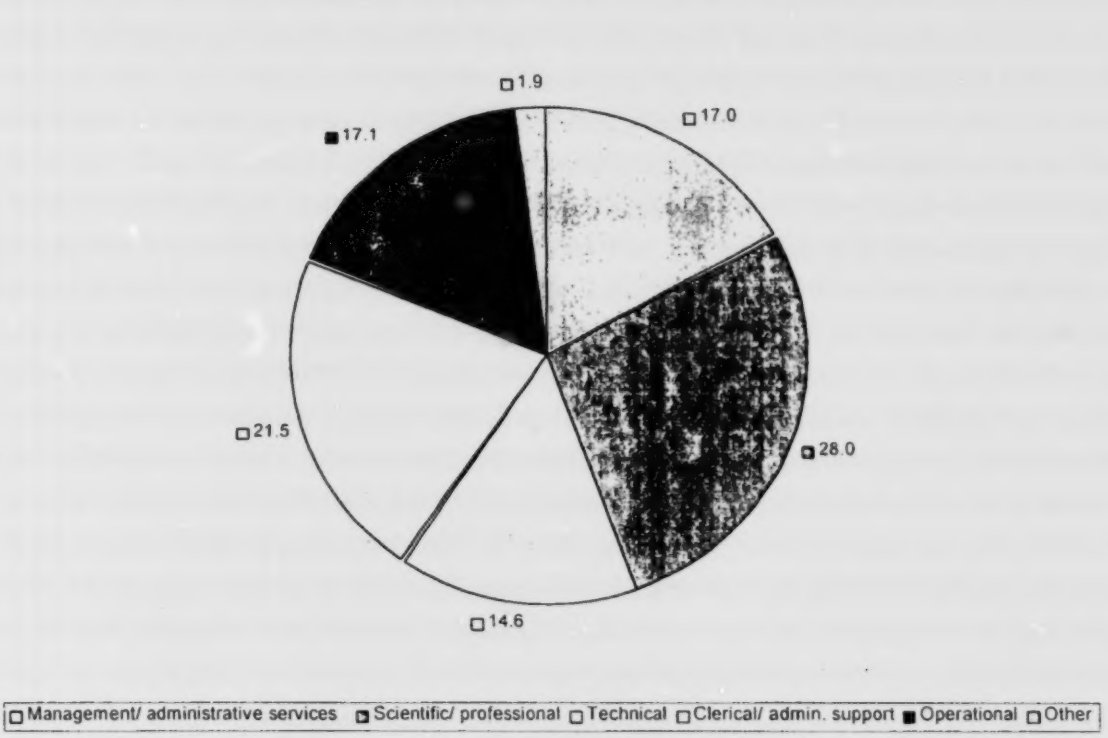
"Core" government workplaces are 81.6% of the surveyed units; 11.8% of the units belong to agencies and special operating units, and 6.6% are in Crown corporations.

Units surveyed employ on average 31 workers and are in existence on average for slightly more than 12.5 years (Table 3). Regarding the size distribution of the surveyed units, 34 5% of the units have between 21-50 employees; 25.4 % between 11-20 employees; 21.5% employ 5-10 employees; and 18.7% have more than 51 employees. Due to size limitations applied in the survey's design, our results might not be representative of the size distribution of the population of government work units. There are significant differences in the size of the units by the function carried out in those units, using the conventional .05 level of statistical significance as a cut-off point. Table

4 shows the mean differences in terms of the total number of workers employed by the various units. The largest units carry out research and development/scientific activities, employing on average 44 workers. Units providing services to the public employ on average 35 workers, closely followed by regulatory activities with an average of 31 workers, and corporate services with 30 workers. Policy units are the smallest, with 21 employees on average. It was expected that the span of control would be the shortest for policy units. The nature and diversity of the work in those units coupled with more heightened political sensitivity requires tighter control, resulting in a shorter span of control.

Data were also collected on the occupational make-up of the surveyed units by asking for the number of workers in different occupational categories. Figure 3 presents the occupational distribution of the workforce in the surveyed units. The occupational groupings utilized in the questionnaire reflect the special nature of government work and were built on the commonly used classification categories in government.[8] The largest occupational group in the surveyed units is scientific/professional workers, who represent on average 28% of the workforce, followed by clerical workers with on average 21.5% of the workforce. Operational workers represent 17.1% of the workforce in the units, while management/administrative services account for 17%. 14.6% of the workers are considered technical workers, and 1.9% of the workers were identified as "other."

[8] In the following calculations, describing the workforce of the surveyed units, two types of weights were applied: in addition to the jurisdictional weights, "size of unit" weights were utilized as well. "Size of unit" weights are required in all calculations where the unit of analysis is the individual employee and not the work unit.



There are statistically significant differences in the occupational distribution of the units depending on the unit's function (Table 4). The results comparing mean differences show, for example, that managerial/administrative employees represent 22.1% of workers in corporate services units, while they are only 12.1 % of the employees in units which provide services to the public. Scientific/professional employees form the largest group of employees in policy units, with 48.2% of workers – mostly professional employees; these were closely followed by research and development/scientific units, where 41.7 % of the employees are in the scientific/professional occupational category. At the same time, in corporate services units only 22.7 % of the workers are scientific/professional workers. Most of the variances reflect differences in the type of work carried out by these units. At the same time, they also mirror prevailing job classification practices in government, such as the heavy reliance of managerial/administrative classifications in corporate services.

At the mean, 58.7% of the workers in the surveyed units have more than 10 years' seniority with government, while only 12.2% have less than 2 years' seniority. Approximately 77.8 % of workers are represented by a union (Table 3). In terms of the characteristics of the respondents themselves, their rank is generally that of a "director";

their average age is slightly above 48; they hold their current positions on average for 4 years; and they have almost 20 years' seniority with government (Table 3). Most respondents are male (71.1%). Some of these figures closely correspond to the results reported by Peters (1999).[9]

To summarize, the sampled units have on average 31 employees and are in existence for 12.5 years. More than 80% of the units are in "core" government. The majority of the units carry out corporate services and services to the public. These workplaces are highly unionized: on average 78% of the workers are represented by a union. The units also have a long-serving workforce, as close to 60% of the workforce has more than 10 years' seniority with government.

IV. ENVIRONMENTAL PRESSURES

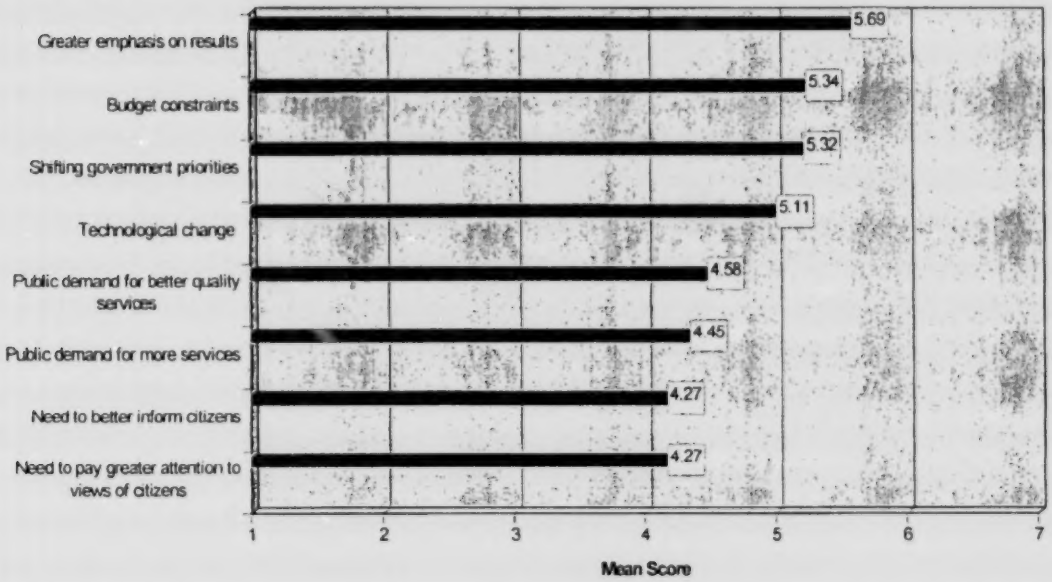
According to the model of change developed for the government sector, changes in government are driven by various environmental pressures, forcing governments to re-think what they do and how they do it. The major contextual factors pressuring Canadian governments to change include increasing global competition, the need to control mounting government deficits, the impact of technological advances, demographic changes, and changing public expectations about government's role in providing public services and the quality of those services.

Respondents were asked to rate, on a scale of 1 to 7, the importance of various environmental factors in determining what they do compared to what they did three years before. The environmental pressures listed in the questionnaire reflect the consensus in the public management literature (Osborne and Gaebler, 1992; Peters, 1995.) On the scale, "1" equals not important, "4" equals somewhat important, and "7" equals extremely important.

[9] According to Peters (1999), the average age of executive group members in the federal government in 1997 was 48.7. In this survey, collected at the end of 1998, the average age of the respondents in the federal government was 48.2.

Respondents identified "increased emphasis on results" as the biggest pressure they were confronting, closely followed by budget constraints, shifting government priorities and technological change. Less importance was accorded to the quality and quantity of public services, and to citizen issues (Figure 4).

Figure 4.
Ranking of Environmental Pressures
(1=not important; 4= somewhat important; 7= extremely important)



There were statistically significant variances among the different functional government units in terms of the extent of the particular pressures they identified, except that all of them rated "greater emphasis on results" as paramount (Table 5). Results comparing mean differences across different types of government units show that "budget constraints" were most highly rated by research units, reflecting that these units endured very significant cuts, especially in the federal government. Compared to the other units, policy and regulatory units identified budget constraints as somewhat less pressing, due probably to their limited exposure to cuts given the "core" nature of those functions to government's work. At the same time, shifting government priorities figured prominently in policy units, as policy work is especially sensitive to them. Technological

change received the highest ranking by corporate services units, corroborating the findings of one our case studies, where technological changes enabled the complete restructuring and amalgamation of corporate services between two ministries. The importance of technological change for corporate services units might reflect governments' efforts to streamline service delivery internally. In addition, computer services are a significant part of corporate services, along with budgeting and personnel information systems; all of these have been subject to considerable technological change in recent years.

Public demand for more and better quality services was, as expected, most acutely felt by units providing services to the public. Citizens' issues were ranked the lowest by all units, but especially by corporate services units, which are most removed from the public. Clients for corporate services units are internal, not the general public. It is therefore not surprising that public pressure was least important as a factor for change with this kind of unit.

A factor analysis – using principal components method by varimax rotation – was performed in order to identify whether some of the different environmental pressures reflect one or more underlying concepts. The results in Table 6 show two factors emerging: one consists of service and citizen issues, with relatively high factor loadings, while the other groups all the remaining pressures together with relatively low factor loadings. We also computed Cronbach's alpha to measure whether the elements within each factor form a reliable scale.[10] Service and citizen issues with a Cronbach's alpha of 0.9 showed high reliability, while the elements of the second factor had a much lower Cronbach's alpha of 0.5. From this analysis we conclude that the four service and citizen issues are measuring the different facets of the same underlying concept, which we shall call "public accountability." Based on these results we constructed a new " public

[10] Cronbach's alpha is a reliability measure computed for scales. It is based on an "internal consistency" test. It measures the correlation of the items within a scale. It is based on the assumption that items on a scale are positively correlated with each other because they are measuring, to a certain extent, a common entity.

accountability" variable that is used in further analyses. The four other environmental pressures do not seem to group together and will be used separately.

To recapitulate our findings: "concern with results" is the number one pressure identified by the work units, with budget constraints taking second place. Considerable differences exist among the different functional units about the importance of various pressures they face. Service and citizen involvement issues still ranked last among the pressures units face.

V. CHANGING NATURE OF GOVERNMENT WORK

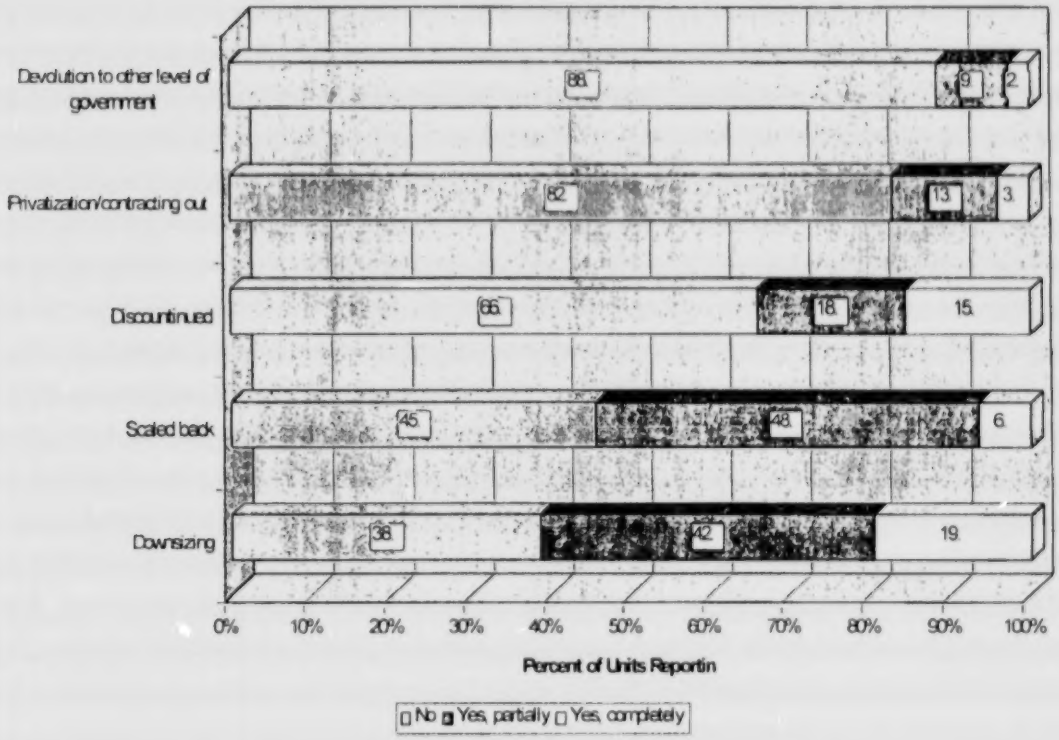
As we set out in our model of change, in response to the various environmental pressures, governments are changing the way they carry out their work. International experiences induce us to observe a general shift away from government delivery of services to government control of service outputs and outcomes; increased accountability of service providers and greater transparency of their work; and renewed emphasis on knowledge generation and dissemination (OECD, 1996).

Several questions in the mail survey solicited information on the changing nature of work in government and the utilization of different restructuring methods at the workplace level. Respondents were asked if in the last three years any activities previously conducted within their units had been either: privatized/contracted out; devolved to another government; downsized – meaning that the activity was still carried out by the unit but by fewer people; or scaled back – meaning that the activity was still done in the unit but in some lessened form; or discontinued. These categories reflect the different restructuring methods utilized in government (Doeringer, Watts, Kaboolian, Watkins, 1996).

Figure 5 shows that, in our sample, devolution to other governments was the least utilized practice, followed by privatization/contracting out. 13.2% of the units reported that some

of their activities were *partially* privatized and contracted out. and 3.8% of units reported that some of their activities were *totally* privatized or contracted out.

Figure 5.
Utilization of Different Restructuring Method



We found these figures lower than expected, based on the high public attention and controversy surrounding privatization and contracting out of government services. However, in interpreting the results we have to consider that the units we survey are the "survivors," and, as a result, privatization/contracting and devolution to another government might be under-reported in our sample, compared to the practices in the universe of all government workplaces. If a unit work was completely devolved, privatized or contracted out, the unit would no longer exist and so it could not be part of the sample. Another possibility is that privatization and contracting out might also be used less, and consequently reported with less frequency in our survey due to the public

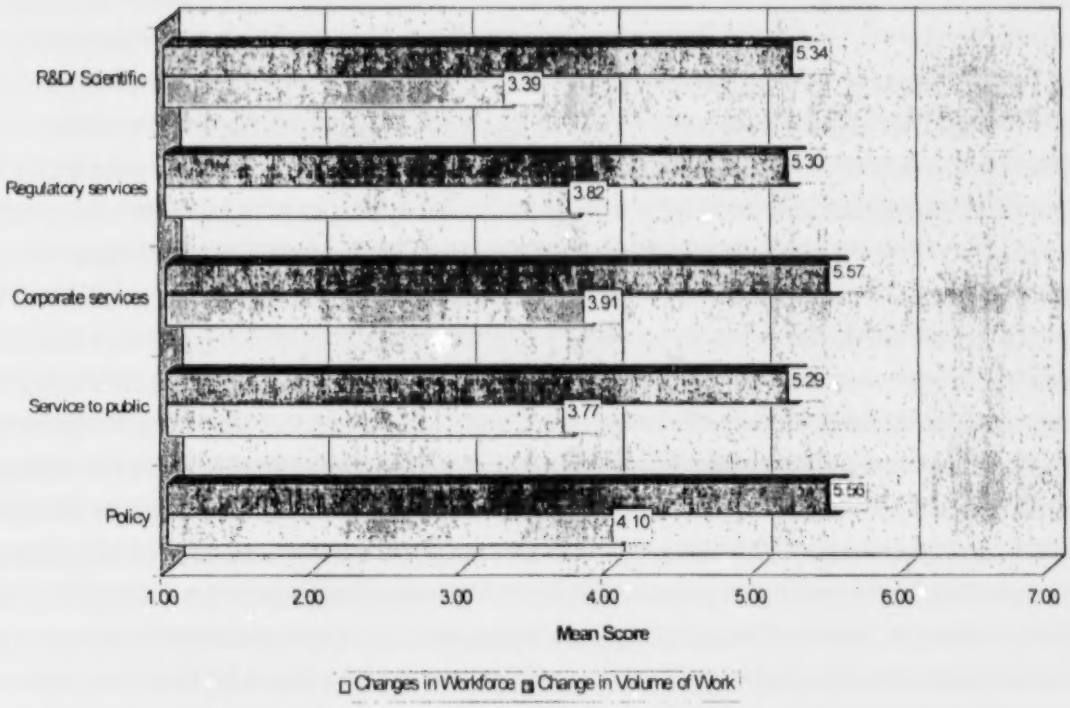
pressure surrounding the issue. Unions might also have played an important role in ensuring that survivor units would not contract out further work. Surveyed units most often faced downsizing (61.5% of all units reporting), or had to scale back their activities (54.4%).

Questions also probed change in the total number of workers and change in the volume of work in the units over the past three years. Respondents used a 7-point scale (1- large decrease; 4 – no change; 7 – large increase) to rate the changes. These responses were recoded to form three broader categories: "decreased" composed of responses 1, 2, 3; "same" equaling 4; and "increased" comprising 5, 6, and 7. Close to 40% of the units reported that their workforce decreased, in 28.2% of the units it remained the same, and 32.3% of the units increased their workforce compared to three years before. At the same time, only 6.3% of the units experienced decreased volume of work; in 11.7% of the units workload stayed the same; while 82% reported an increased volume of work. A crosstabulation of the changes in the workforce by the changes volume of work (Table 7) shows that altogether 434 units (56.7%) responding to both questions reported that work in their unit intensified. These included 221 units where the workforce decreased and the volume of work increased; 169 units where the workforce remained the same but the volume of work increased; and 44 units where the workforce decreased and the volume of work remained the same. At the other end of the spectrum, 2.7% of units (21 units) recorded a lightening of their workload; in 9 units the workforce remained the same while volume of work decreased; only 1 unit reported increased workforce with decreased volume of work; and 11 units had an increased workforce with the same volume of work. The remaining 310 units (40.5%) reported that either both their workforce and volume of work decreased (39 units) or both remained the same (35 units) or both increased (236 units).

Tests comparing differences in means showed that there are statistically significant differences in the changes of the workforce and the volume of work in the different functional units (Figure 6). Policy units reported that, on average, their workforce remained the same, while all other units reported decreases in their workforces. The most

pronounced decrease in the workforce happened in the research and development/scientific units, followed by units providing services to the public. In contrast, while all units reported increases in the volume of work, the highest increases were reported by corporate services units. Policy units also reported increased workloads.

Figure 6.
Work Intensification by Function of Unit
(1= large decrease; 4= the same; 7= large increase)



The most significant changes were reported when respondents were asked about the changes in the content of work compared to three years ago. Only 16% of the units reported doing the same kind of work in much the same way; 32.5% did the same kind of work but differently; approximately 34 % of the units were doing slightly different work, and 17.4% of the units did very different work.

Next, we turn to multivariate analysis to investigate the net effects of each factor while controlling for other factors. In our model we posit that various environmental pressures force government to change the work they do and how they do it. SWIG allows us to test these links, as it provides measures of both the environmental pressures the work units face and the changing work in government. We ran several linear regressions to determine factors influencing (1) changes in the workforce; (2) changes in the volume of work; and (3) changes in the content of work. For all regressions, the explanatory variables included the different environmental pressures, such as budget constraints, shifting government priorities, technological change, greater emphasis on results, and the composite variable of public accountability. We also included other variables to control for the effects of unit functions – with units providing service to the public as the reference category, the "core" government vs. "outside core" government differentiation, and a variable describing unit size, measured as the total number of workers in the unit.

Changes in the workforce seem to be determined by several variables identified in the equation. Roughly 10% of the variance in workforce change was explained by the explanatory variables, pointing to a relatively weak overall explanatory power (Table B1 in Appendix B). The severity of budget constraints experienced by the unit had a negative impact on the changes in the workforce: the more severe the budget constraints, the larger the decrease in the workforce. Public accountability behaved the opposite way: the less important the public accountability, the larger the decrease in personnel. These results are completely in line with our prior expectations. Compared to public service delivery units, corporate units were less likely to experience decreases in their workforce, and more cuts are carried out in "core" government than in the "outside core" government. It is hard to explain why public service delivery units were more prone to workforce reductions than corporate services units; we had expected the opposite. Our surprise is somewhat tempered by our previous results showing that public accountability issues are identified as the least pressing ones influencing the work in the surveyed units.

Shifting government priorities, greater emphasis on results, public accountability and their status as corporate service units were found statistically significant in explaining

changes in the volume of work. All these variables were positively related to changes in the volume of work, meaning for example that the more important those specific environmental pressures are for the unit, the more likely that the volume of work has increased in those units. Compared to units providing services to the public, corporate services units were more likely to report increased workloads.

To conclude, our survey suggests that the most pervasive methods for restructuring work appear to be downsizing and a scaling back of operations. Contracting out and devolution to other levels of government were not nearly as widely used, as expected, although our sample might be under-reporting their incidence, because it included work units that survived the restructuring. Change in the nature of government work is pervasive. Only a small minority of workplaces (16%) reports no change in either the content of work or in work methods. Also, the results point to a degree of work intensification. Nearly 57% of the survey respondents reported an increase in work volume relative to the size of the workforce.

VI. HUMAN RESOURCE MANAGEMENT PRACTICES

According to the next stage in our model of change for the government sector, as documented in the previous chapter, the changing nature of government work requires workers with new skills and the adoption of new workplace practices. It is expected that the "new" government workers will become more service-oriented, flexible, more highly skilled and multi-skilled. The emergence of a new, more highly skilled government workforce requires the introduction of new workplace practices. These practices may encompass increased employee involvement, more information sharing with employees, greater reliance on teamwork, increased employee training, multi-skilling, job enlargement, job enrichment, and the introduction of new compensation practices, such as pay for performance (OECD, 1996). The following section provides detailed information on the incidence of these various human resource management (HRM) practices.

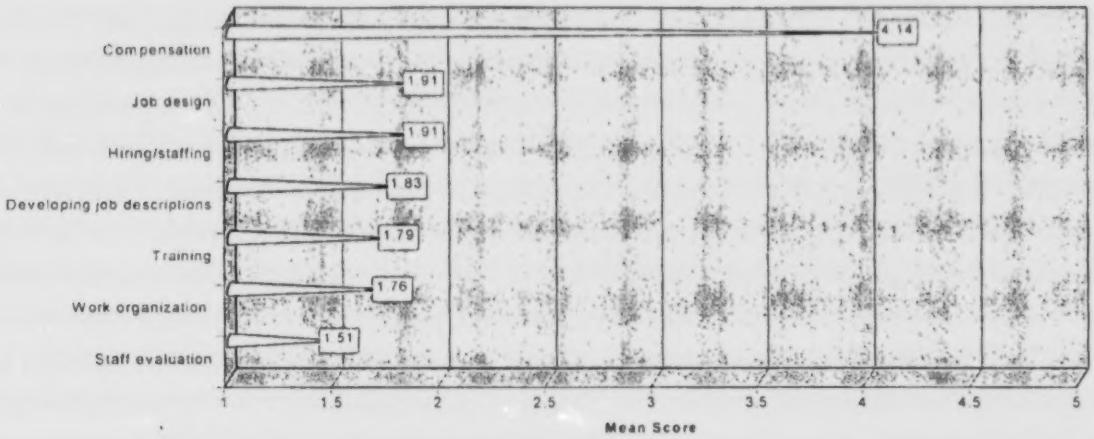
VI. 1. Autonomy at the Unit Level

Providing increased autonomy for local managers is considered a cornerstone of new public management. According to the OECD, one of the main thrusts of reform and renewal in public management is devolving responsibility for both financial and human resources to line departments and to line managers. They advocate a shift from extensive regulation and compliance management to increased discretion and initiative for operating managers in achieving targets. They argue that decentralization and devolution of human resource management are instrumental in shifting from a rule-bound culture to a performance-based system. The advantages of decentralization are in creating greater diversity of practices, better recruitment and training, increased responsibility and accountability, sharper focus on efficiency and effectiveness, and the provision of better services (OECD, 1996).

SWIG contained several questions probing the level of responsibility for various HRM decisions in government organization, the level of autonomy, and the change in autonomy experienced by unit heads in the last three years for various HRM decisions.

Respondents were asked to indicate the level of responsibility for staff evaluation; work organization; training; developing job descriptions; hiring /staffing; job design; and compensation issues. On the questionnaire, "1" represented managers reporting to the unit head; "2" represented the unit heads who responded; "3" the immediate supervisor of the respondent; "4" represented the H.R. department; and "5" represented the central agency. Compensation issues were reported to be the most centralized, while staff evaluation issues were the most decentralized. (Figure 7).

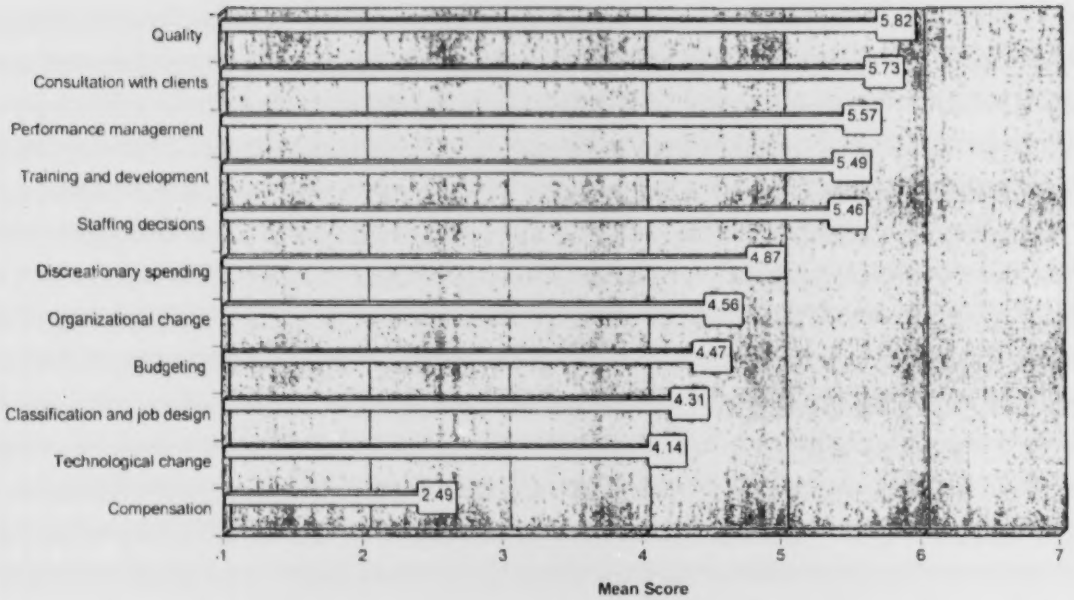
'Figure 7
Level of Responsibility for Various HRM Decisions
1=manager reporting to you; 2=yourself; 3=you immediate supervisor; 4=HR department; 5 central agency)



We expected very little autonomy on compensation issues from managers as, on average, close to 80% of the workers in the work units are unionized and compensation is bargained centrally in all participating governments. Compensation of excluded employees is also set centrally. Except for compensation issues, all HRM decisions were decided either by managers reporting to unit heads or by the unit heads themselves. There were no statistically significant differences found in terms of the level of responsibility for various HRM decisions by the function of the surveyed units, except for job design and work organization issues (Table 8). At the same time, statistically significant differences were found in the level of responsibility for HRM decisions by the size of the unit, except for compensation issues. For all other HRM decisions, the bigger the unit, the more likely that managers reporting to the head of the unit will be responsible for the decisions, while the smaller the units, the more likely that unit heads or their superiors will be responsible for these decisions (Table 9). To interpret these results, the determining factor seems to be span of control. In larger units more of these decisions are left with managers, while in smaller units the unit head (or superior) is able to take that role.

Another SWIG question asked unit heads to rate on a scale of 1 to 7 (1- no influence; 4- moderate; 7- complete autonomy) the level of autonomy they enjoy regarding eleven HRM and financial decisions (Figure 8). Underscoring our previous results on the level of responsibility, unit heads reported that they experienced the least autonomy regarding compensation and the most autonomy on quality and client consultation issues. On the traditional HRM functions they also reported high level of autonomy for performance management, training and development, and staffing decisions. They had moderate influence over organizational change, classification and job design, and financial issues. There are no statistically significant differences in the unit head's level of autonomy between units in "core" government and units "outside core" government. Two exceptions are compensation, and job classification and job design, where unit heads "outside core" government report higher levels of autonomy. Since the items tended to be highly inter-correlated, they were treated as a scale and subjected to reliability analysis, which produced a Cronbach's alpha of 0.82.

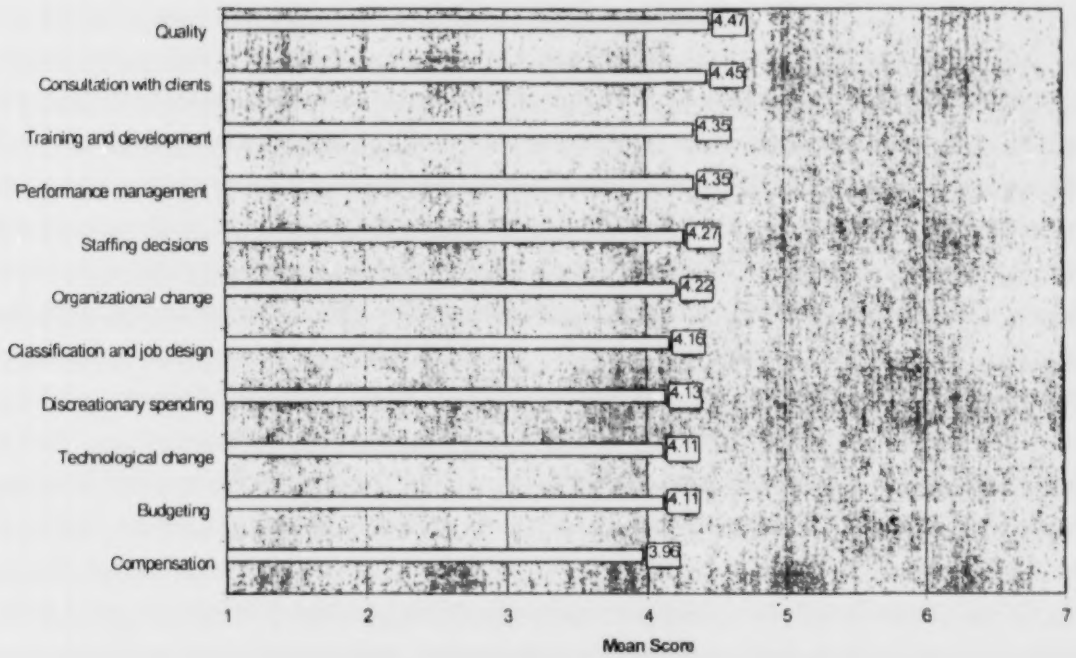
Figure 8.
Level of Unit Heads' Autonomy for Various HRM Decisions
(1= no influence; 4= moderate influence; 7= strictly my decision)



Turning to the change in unit head's autonomy, respondents rated on a scale of 1 to 7 (1- much less autonomy; 7- much more autonomy) whether they have more or less autonomy compared to three years ago in each of the eleven HRM and financial areas. Responses were very similar to those provided to the question dealing with the level of autonomy (Figure 9). Areas where respondents reported somewhat more autonomy included quality issues, consultations with clients, performance management, and training and development. Compensation was the only area where respondents reported a very slight decrease in autonomy. Unit heads "outside core" government consistently reported a higher increase in their autonomy than their counterparts in "core" government units, although the differences in means were not statistically significant for all the eleven areas. The items on this scale were highly correlated with a Cronbach's alpha of 0.9.

For this scale we also tested, using factor analysis, whether distinct dimensions of autonomy were embedded in these eleven items. Results in Table 10 show two different dimensions emerging. One factor might be described as autonomy around various

Figure 9.
Change in Unit Heads' Autonomy 1995-1998
(1=much less autnonomy; 4=about the same; 7= much more autonomy)



aspects of "total quality management," which includes four specific items: consultation with clients, quality, training and development, and performance management. A second factor captured the degree of "budgetary" autonomy that these unit heads expressed around staffing decisions, classification and job design, compensation, budgeting, and discretionary spending. The items of organizational change and technological change loaded relatively weakly on both factors. Both the total quality management and the budgetary autonomy items together generated reliable scales with Cronbach's alphas of 0.86 and 0.83, respectively.

To summarize, managers report high levels of autonomy in quality of services and client consultation issues, in performance management, training and development and staffing decisions. These are the areas, except for staffing decisions, where their autonomy also increased the most in the last three years. Managers of units "outside core" government experience more autonomy in compensation and in job classification and design, and

report consistently larger increases in their autonomy in all surveyed areas than their "core" government counterparts in the last three years.

VI.2 Performance Measurement

New public management practices represent a major shift from "process accountability" to "accountability based on results," emphasizing economy, efficiency, and effectiveness of public services. "Management" of people, resources, and programs replaces "administration" of activities, procedures, and regulations. "Managerialism," in contrast to "administration," is concerned with "results," "performance" and outcomes." (Charih and Rouillard, 1997).

Reflecting this shift in governing philosophy in all Canadian governments, respondents to SWIG identified a greater emphasis on results as the most important pressure they were facing. However, only half of the workplaces reported that they use any formal performance measures to evaluate the work of their unit. At the same time, 60.8% of the units measured the financial costs of the services they provided, but only 33.8% measured the financial benefits of their services. Altogether 30% of the surveyed units measured both the financial cost and the benefits of their services.

Wilson (1989) draws a distinction between public agencies focusing on their operators' observable activities – or their 'output observability' – and those focusing on the observable results of their activities – where 'outcome observability' is key. This basic distinction leads him to identify four types of organization: (1) the production organization, where both outputs and outcomes can be measured; (2) the procedural organization, where compliance with rules and procedures is directly observable and controllable; hence, where outputs can be measured yet outcomes, which are less easily defined, cannot be; (3) the craft organization, where outcomes are directly measurable since it calls for compliance with externally-imposed standards, but where measuring outputs have less relevance; and (4) the coping organization, where neither outcomes nor outputs are readily observable, and can be controlled only indirectly. Wilson argues that

these different organizational types require different type of incentives and different management cultures, since each one poses different managerial problems.

To operationalize Wilson's typology in further analysis, SWIG asked respondents whether the outputs and/or the outcomes of the work unit's activities could be measured. Examples of outputs include the number of licenses processed, or the number of welfare recipients counseled. Outcomes comprise the results, such as revenues collected from license renewals, increased road safety, etc. In our sample, nearly 65.4% of the respondents felt that the outputs of their work unit's activities can be measured, and 60% reported that the outcome of their activities is also measurable. 51.5% of the units responding to both questions noted that both the outputs and the outcomes of their unit's activities are measurable. Using Wilson's terminology in our sample, 51.5% of the units were "production," 13.3% "procedural," 8.7% "craft," and 26.5% "coping" organizations.

There were statistically significant differences among the units regarding performance measurement by the primary function of the unit (Table 11). Policy units were the least likely to report the use of formal performance measures, the least likely to be able to measure the financial costs and benefits of their services, and their outputs and their outcomes. Units providing services to the public used formal performance measures the most. This is consistent with our prior expectations, as the nature of policy work does not readily lend itself to performance measurement, which figures most prominently in units providing services to the public. Among corporate services units, the largest group in our sample, 47% reported the use of any formal performance measures. Research units were the most able in measuring their outputs and the financial benefits of their services, even though they could measure the financial costs of their services more than their financial benefits.

While an increasing number of government workplaces are using various performance measures, comparisons across units are very hard to make, since there is no common, accepted measure of performance which could be calculated for every unit that might, say, be akin to "profit" in the private sector. However, profits can be easily manipulated

as well through various accounting practices, for instance, making measurement of an organization's true performance very problematic even in the private sector. An added difficulty in the government sector is that it is seldom clear what constitutes performance for a unit and how that performance should or could be measured. For example, what is the performance of a policy unit and how can we measure that?

In light of these conceptual problems and practical difficulties we did not set out to collect objective information on the performance of the units. We felt that the key question is whether work units are moving towards developing performance measures. We selected three areas, which we believed reflect the essence of improved public services: efficiency/productivity, quality, and on-time delivery. Respondents were asked to rate on a scale of 1 to 7 (1- great decrease in performance; 7- great increase in performance) their work unit's change in performance on those areas, in comparison to three years ago. Unit heads reported that the performance of their units increased in all three areas, most notably in their efficiency/productivity. The average score for on-time delivery was 4.7, for quality 4.89 and for efficiency/productivity 5.11.

Regression analysis was performed on the use of formal performance measures in work units (Table B2 in Appendix B). It was positively related to four factors after controlling for all other factors: (1) whether it formed part of the priorities of the government, (2) the emphasis on results within the unit, (3) the ease of measuring outputs and outcomes within the unit, and (4) the size of the unit. It would appear that the first three factors capture the need for measuring and the ease with which measures could be made. Size of the unit in this case appears to act as a proxy for complexity of operations.

To conclude, a cornerstone of NPM is increased emphasis on results. It is also central to Canadian governments, as in our survey managers identified emphasis on results as the most significant pressure they face. However, measuring performance of various government functions is extremely difficult. Despite the heavy pressure for measuring results, only half of the workplaces report that they use any kind of performance measures. In addition, approximately 60% of units measure the costs of their services,

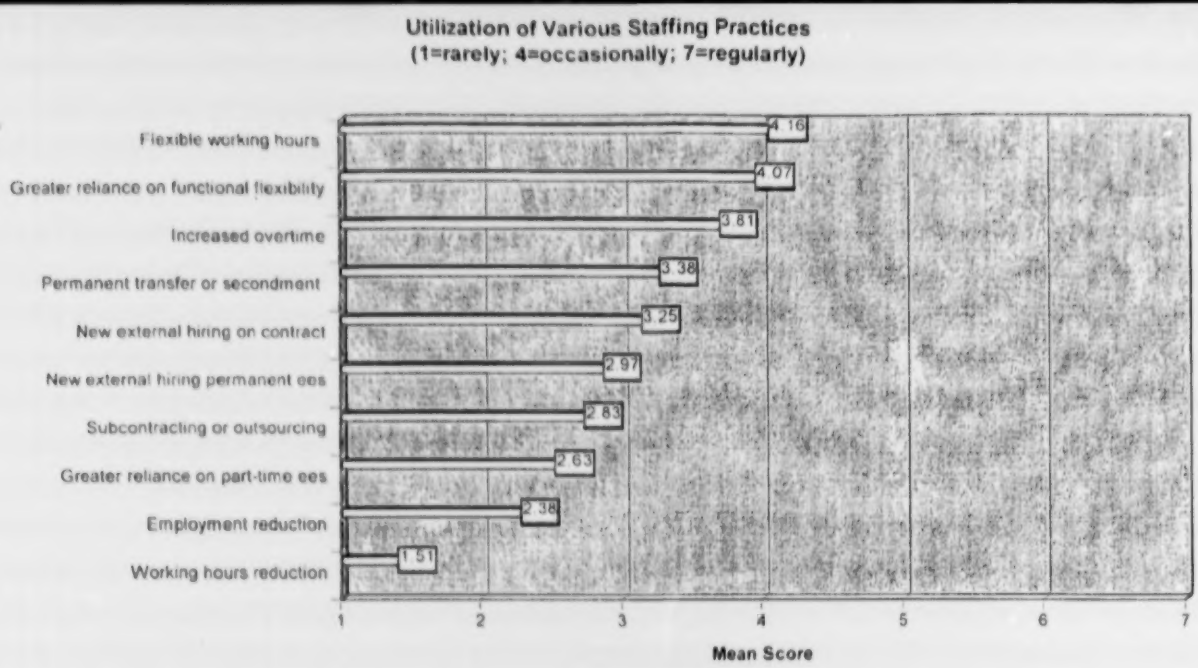
while only 34% measure the benefits of services they provide. 30% of the units could measure both costs and benefits. As expected, policy units are the least able to measure their performance, while units providing services to the public use formal performance measures the most. Managers also report that the performance of their units increased the most regarding efficiency/productivity, and somewhat less in terms of quality and on-time delivery. Overall, the use of performance measures in the workplace was found to be positively associated with the outside pressures for measuring results and the ease with which those results can be measured.

VI.3 Staffing Practices

VI.3.A A General Overview

Government workplaces can take different courses of action in response to changes in the nature of their work. The choices they make are influenced by the constraints they face. SWIG asked respondents to rate on a scale of 1 to 7 the frequency with which different staffing practices were used over the least three years. These practices included permanent transfers and secondments from other government units; hiring new permanent and contract employees; subcontracting or outsourcing work; increased use of overtime; greater reliance on part-time workers; reliance on functional flexibility – such as job rotation, multi-skilling and total quality management (TQM); adopting flexible working hours; reducing working hours; and employment reductions.

Figure 10 shows the utilization of these staffing practices between 1995-1998, where 1 denotes "rarely"; 4 is "occasionally"; and 7 equals "regularly." In accordance with the limited resources available to these organizations, the three practices most often used included flexible working hours, greater reliance on functional flexibility, and increased overtime. All of these practices build on the existing workforce responding both to possible increases and contractions in the volume of work. They also provide more flexibility, choice and variety in work and working hours both for management and for workers. The least applied practices were the different methods of employment reduction, including: work reduction – which is the least used; employment reduction; greater reliance on part-time workers; and subcontracting and outsourcing. In interpreting our results we should remember again that our sample consists of "survivor" units. If restructuring was carried out by eliminating whole work units – by privatizing, contracting out, devolution to other governments, or simply ceasing the work of the unit – then those actions do not show up in our survey as employment reductions. We will also discuss in more detail functional flexibility issues later, in the section on flexible job design.



For some of these staffing practices statistically significant differences were found in their utilization by the function of the unit (Table 12). Consistent with the findings in the previous chapter, where policy and corporate services units reported the highest increases in their volume of work, these units report the highest utilization of permanent transfers and secondments from other government units and of increased overtime. Reflecting that research and scientific units endured the most severe budget cuts compared to other units, these units also report the highest use of subcontracting or outsourcing, reduction in working hours, and employment reductions. We also tested the correlation between the various staffing practices and changes in the workforce and in the volume of work. Less than half of the correlations were found statistically significant, and even the statistically significant ones produced low correlation coefficients – except that employment reduction was relatively highly correlated with the changes in the workforce and increased overtime to changes in the volume of work (Table 13).

A factor analysis of the ten different staffing practices helped identify key human resource strategies that underlie the use of these practices (Table 14). Three distinct factors emerged from the analysis: The first factor, which we call "expansion" strategies,

includes new external hiring of permanent employees; new external hiring on contract; subcontracting and outsourcing; and increased use of overtime. The second factor, which may be called "flexibility," brought together permanent transfer or secondment from other government departments; greater reliance on functional flexibility; and flexible working hours. Both of these factors seem to represent staffing strategies which respond to an increase in the volume of work. However, while the practices of the first factor imply that the units utilizing them have some ability to attract added resources, "flexibility" strategies have to live within their existing resource base. A third factor included various "reduction" staffing practices, such as greater reliance on part-time employees, reductions of working hours, and employment reductions.[11]

The three factors identified do not neatly fall into the "numerical" and functional" flexibility labels developed in the literature. However, they show how employers use a combination of "numerical" and "functional" flexibility practices to adjust to work flows depending on the context in which they operate. Our three factors represent different staffing strategies.

We also ran separate regressions to gain a better understanding of the underlying causes for why these three major groups of staffing strategies are used (Table B3 in the Appendix). The explanatory variables included different environmental pressures; change in the workforce; change in the volume of work; and change in the content of work. We also controlled for the effect of the primary function of the unit, "core" government versus "outside core" government, and unit size.

All three models were statistically significant. "Expansion" staffing practices were found to be positively related to the importance of shifting government priorities and public accountability; the size of the unit; and, thirdly, the changes in the volume of work of the unit. As hypothesized in the previous paragraph, budget constraints were not significant

[11] Cronbach's alpha was calculated for all three factors to check the cohesion of the elements in the three subgroups. Although their values were relatively low, indicating weak reliability, we decided to construct three composite variables, called "expansion," "flexibility" and "reduction," which will be used in further analysis.

in explaining their utilization. Policy, corporate and research units were more likely to use these practices than service delivery units, and these practices were more likely to be applied in units "outside core" government than in "core" government. One surprising finding from these results is that research units are more likely to apply these practices than service delivery units, given our previous finding that research units were subjected to severe budget cuts. On the other hand, it was expected that units "outside core" government would be able to resort more often to these expansion staffing practices than units in "core" government, as budget constraints might be more elastic for units "outside core" government. Organizations "outside core" government are often required to raise revenues, they are allowed to keep those revenues, and they might also be required to cover their costs from their revenues. Their budgeting process is not linked to the governmental budget process, which could provide them with more room to maneuver. One of our case study cites, the Technical Standards and Safety Authority operates under these circumstances. The model explained 13% in the variation in the dependent variable.

From the various environmental pressures only technological change was statistically significant and positively related to the use of flexible staffing practices. The size of the unit, changes in the volume of work, and the content of work were also positively related to flexible staffing practices – meaning that the larger the unit the more likely they resorted to flexible staffing practices. Also, the greater the work volume increased and the content of work changed in units, the more likely it was that they applied these practices. Changes in the workforce were not statistically significant to explain the use of flexible staffing practices.

As expected, reduction strategy was significantly positively linked to budget constraints, while changes in the workforce were negatively related. The size of the unit was also found to be positively related to reduction-type practices.

To sum up, in order to adjust to the outside environmental pressures and to changes in the nature and volume of work, work units most often turned to various flexible staffing practices, including flexible working hours, functional flexibility, and increased overtime. By contrast, different employment reduction methods were reported to be the least utilized. The differences in the constraints various functional units had to contend with were instrumental in the units' use of various staffing practices. The staffing practices group into three distinct human resource strategies. The first, "expansion" strategy, includes hiring employees permanently and on contract, subcontracting, outsourcing, and increased use of overtime, where the increased volume of work and changing work content could be accommodated by the deployment of additional resources. The second, "flexibility" strategy used staffing practices such as permanent transfers or secondments from other government departments, greater reliance on functional flexibility, and flexible working hours to accommodate the increased volume of work and changing nature of work by increased flexibility in using existing resources. The third factor included various "reduction" staffing practices, such as greater reliance on part-time employees, reductions in working hours, and employment reductions.

VI.3.B Flexible Job Designs and Self-Directed Work Teams

In this section we examine in detail the adoption of some workplace practices which in the previous section were labeled "functional flexibility."[12] Based on the conventions in the literature flexible job designs encompass multi-skilling/job rotation, or doing more than one job; job enlargement, or adding tasks to a job; job enrichment, or allowing more autonomy in doing a job. We will also discuss in this section the use of self-directed work teams, which involves designing/managing a group of tasks.

Information was sought on the incidence of these practices in work units, the percentage of non-managerial employees actively participating in them, and the change since three years ago in the level of active participation. In terms of measuring the extent of employee participation, respondents who reported the use of any of these practices were not asked to recall the exact number of participating employees but to indicate the number within four ranges: less than 10%; 11-25%; 26-50%; more than 50% of employees participating. They had to rate the change in the level of participation three years ago, on a scale of 1 to 7, where 1 represented much less participation now; 4 was about the same, and 7 indicated far more participation now.

Overall, 71% of the units surveyed reported using job enrichment and job enlargement. Almost 60% of the units utilized multi-skilling/job rotation, while self-directed work teams were applied at 47.9% of the units. In order to situate these findings, it would be interesting to compare our data with similar information from the private sector. We have private sector data from the Human Resource Practices Survey (HRPS), which was carried out in 1993. In making these comparisons we have to keep in mind that HRPS covered only four industry sectors and was conducted 5 years before our survey. However, the questions regarding these practices are identical in the two surveys.[13]

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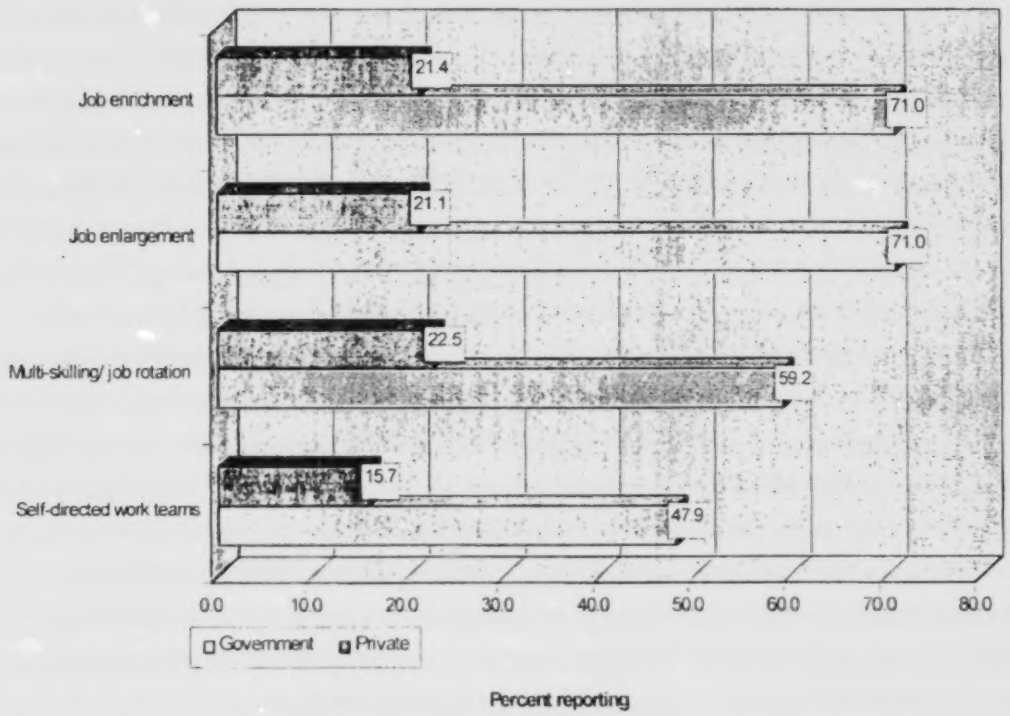
[12] Flexible job designs contribute to functional flexibility, which in turn contributes to overall flexibility in the workplace. In this sense, flexible job designs, which include multi-skilling/job rotation, job enrichment, and job enlargement, represent specific work practices which create greater overall flexibility.

[13] HRPS covered four sectors: wood products, fabricated metal products, electrical and electronic products and selected business services. The results of HRPS are reported in Betcherman, et.al. (1994). Data

The incidence of flexible job designs in the government sector was more than triple that reported in the private sector in Canada. In the private sector multi-skilling/job rotation was reported in 22.5% of establishments, job enlargement in 21.1%, job enrichment in 21.4% and self-directed work teams in 15.7% (Figure 11).

Figure 11.
Comparison of Incidence of Flexible Job Design Practices
Government and Private Sectors



There are several hypotheses that explain the differences in the utilization of flexible job designs in the government and the private sector. These have to do with differences in these areas:

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allowing comparison with the private sector might be available from the Workplace and Employee Survey (WES) by Statistics Canada. However, at the time of this writing, only the pilot of WES has been completed, and it contains few observations.

- in the two surveys, such as their different unit of analysis and principal respondents, as well as SWIG being carried out 5 years later;
- in the nature of work carried out by the two sectors;
- in characteristics of their respective workforces, government having a significantly more highly educated workforce; and
- in the institutional characteristics within the two sectors: the highly centralized nature of government could contribute to the diffusions of workplace innovations in a concentrated fashion.

To ascertain to exact causes of these differences is beyond the scope of this report.

There were no statistically significant differences in the use of various flexible job designs between units in "core" government or "outside core" government, or in the different functional units. The incidence of multi-skilling/job rotation and job enlargement increased with the size of the unit, and the larger the size of the unit the more managers reported using these practices. The presence of flexible job design programs was related to the prominence of technological change in the unit. The more prominent technological change was in the unit, the more likely it used flexible job designs. This relationship was significant for all four types of flexible job designs (Table 15).

In terms of active employee participation in these programs, in case of job enrichment, which was one of the most utilized programs, from those units that reported the use of job enrichment 11.1% of the units reported that less than 10% of their employees participated, 29.7% of the units had between 11-25% of their employees participating, 30.3% of the units had 26-50% of their employees in the program, and 28 % of the units reported more than 50% of their employees using job enrichment (Table 16).

In the last three years, employee participation in all flexible job design practices increased most notably for job enrichment and job enlargement, and least of all for self-directed work teams. There was a statistically significant relationship between the intensity of change in the content of work and employee participation in flexible job

design programs. The more profound the change in the content of work, the larger the increase of employee participation in all four types of programs (Table 17). The same positive relationship was found between the increased employee participation in flexible job design mechanisms and the importance of public accountability issues for the units – except in the case of multi-skilling/job rotation, where the relationship was not statistically significant (Table 18).

In multivariate analysis using regression, we found that flexible job designs were most likely to be adopted in units with (1) a higher volume of work, (2) measurable outputs and outcomes, (3) high levels of local autonomy, and (4) self-directed work teams (Table B4 in Appendix). All of these relationships are compatible with predictions made from several theoretical models discussed earlier.

Multivariate analysis also revealed a profile of work units where self-directed work teams were most likely to be found. Units with greater budget constraints and greater public accountability were more likely to adopt self-directed work teams. Teams were also more often found in units with a high percentage of scientific and professional employees. In terms of the nature of work, teams were less likely to exist in policy and corporate services units than in service delivery units. Lastly, we found a negative effect of unit size on adoption of teams: it appears that smaller units have a greater ability to make the idea of teams effective.

Overall, government workplaces reported a widespread use of various flexible design mechanisms, where more than half of all workplaces reported using of each of multi-skilling/job rotation, job enrichment and job enlargement. The leading practices were job enrichment and job enlargement, which obtained at 70% of the units. Flexible job designs occurred in the government sector at three times the rate as in the private sector. Employee participation in these practices also increased in the last three years. It seems that the utilization of job enrichment, job enlargement and multi-skilling/job rotation was driven primarily by an increase in workloads. These practices occurred most often in units where work outputs and outcomes were measurable and managers enjoyed high

levels of autonomy. They were also positively related to the presence of self-directed work teams in the unit. These work teams, in turn, were mostly found in workplaces with greater budget constraints and public accountability pressures, in service delivery units, and in workplaces with a high percentage of scientific and professional employees.

VI.4 Employee Involvement and Participation

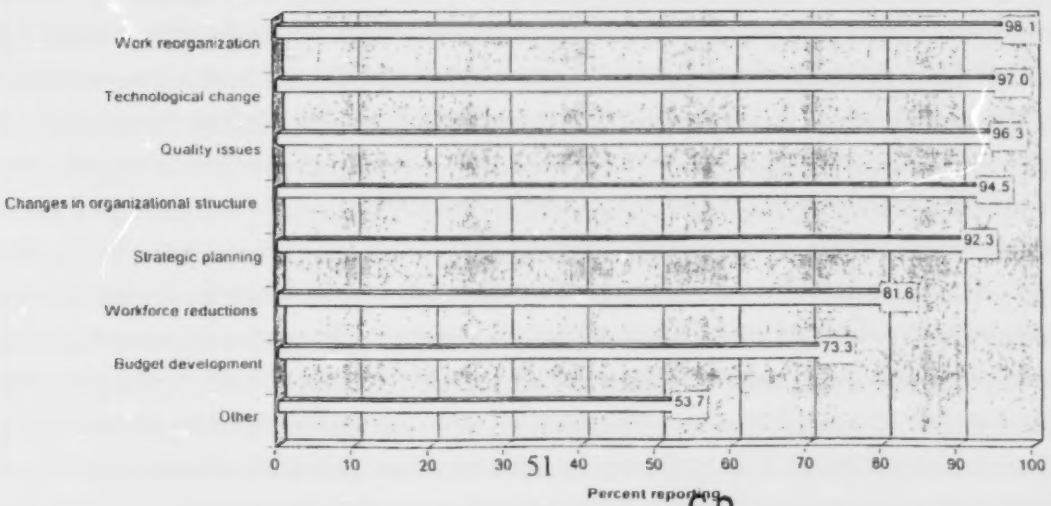
SWIG asked questions about formal employee participation programs, such as employee suggestion programs, employee attitude surveys, direct information sharing with employees, and quality circles/problem solving teams. SWIG questions about employee involvement and participation were identical to the questions on flexible work designs.

A vast majority (82.4%) of units from the formal employee participation programs reported using direct information sharing with employees. By contrast, only 36.2% of units utilized employee attitude surveys, 37.1% had employee suggestion programs, and 40.1% reported quality circles/problem solving teams. 75% of units that had direct information sharing reported that more than 50% of their employees were active participants in that practice. 62.6% of the units that conducted employee attitude surveys reported a participation rate of more than half their employees. Employee suggestion programs were utilized the least, as 54.2% of units using these programs reported that less than 10% of their employees participated (Table 19). Compared to three years ago, the level of active participation increased the most in direct information-sharing with employees, followed by quality circles/problem solving teams. Employee participation remained the same in employee suggestion programs. On a scale of from 1 to 7 – where 1 means much less participation now, 4 represents unchanged levels of participation, and 7 denotes markedly increased participation – employee suggestion programs received an average score of 4.06; employee attitude surveys, 4.33; quality circles/problem solving teams got 4.53; and direct information sharing with employees received an average of 4.87.

Further information was also sought on various topics relating to direct information sharing with employees and the stages at which information was shared in the decision-making process. Topic areas listed in SWIG included strategic planning, budget development, changes in organizational structure, work reorganization, technological change, workforce reductions, quality issues and other. These items resulted in a strong summative scale, with a Cronbach's alpha of 0.9, which suggests that all important aspects of direct information sharing were captured by our measure. More than 90 % of unit heads reported sharing information on work organization, technological change, quality issues, changes in organizational structure, and strategic planning. In the most sensitive areas, i.e., budget development and workforce reductions, 73.1% and 81.6% of units reported sharing information (Figure 12). Managers also indicated that most of this information was shared with employees in the early planning stages – with the notable exceptions of workforce reductions, changes in organizational structure, and budget development. In these cases, the stage in the process at which information was shared differed widely across units. Quality issues were discussed most often at the early planning stages (Table 20).

In regression analysis, after controlling for the effects of all other factors, information sharing was found to be positively related to three factors. First, information sharing was high when budget constraints were severe.

Figure 12.
Incidence of the Type of Information Shared with Employees



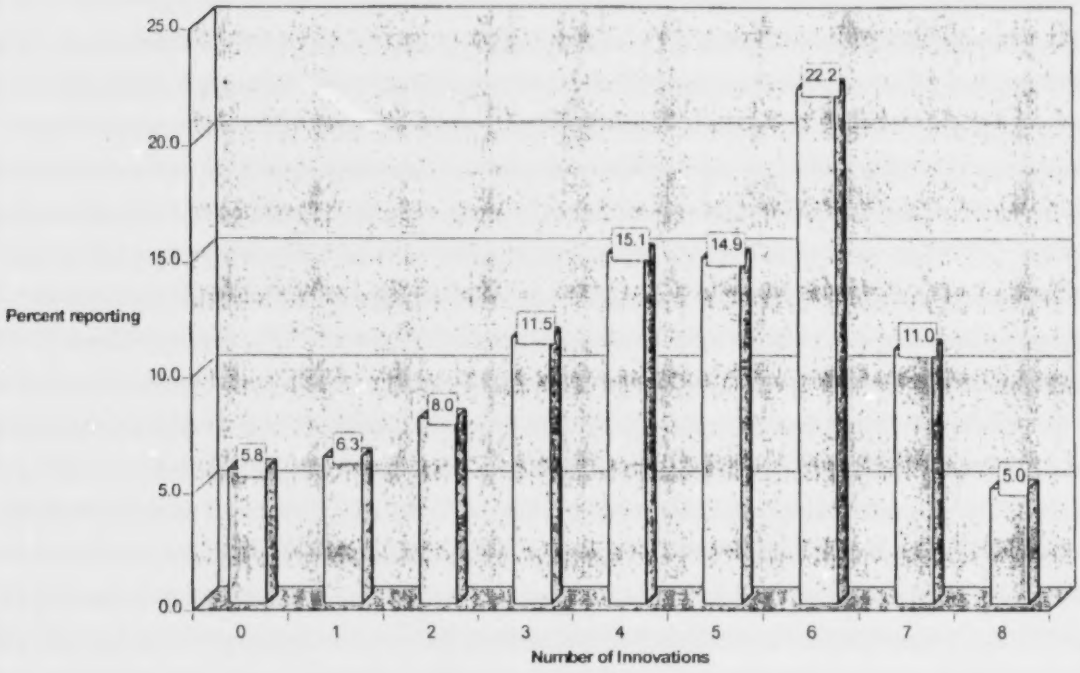
This finding supports parts of our model that posit a context-driven impetus for changing workplace practices. Second, information sharing was also reported to be greater in units where quality circles (QCs), teams or other such practices had been adopted. Lastly, information sharing was greater in units where managers and supervisors had received more training (Table B5 in Appendix B.)

In terms of QCs, multiple regression analysis revealed that QCs were more likely to be reported in units with higher public accountability, a higher percentage of scientific and professional personnel, and a greater extent of union involvement. Thus, these results further reinforce the link between external pressure and adoption of innovative work practices. Further, the nature of work and the extent of union involvement also appear to play a role in the adoption of innovative work practices. (Table B4 in Appendix B).

To summarize our findings on employee involvement and participation: direct information-sharing with employees seems to be the order of the day. While more than 80% of the managers share information directly with their employees, its reach in terms of level of active participation by employees was also increasing. Quality issues were most likely to be discussed early on, while budgets, workforce reduction, and changes in organizational structure were discussed at later stages. Direct information-sharing with employees was linked positively to the severity of budget constraints experienced, the amount of managerial and supervisory training provided, and the use of QCs and self-directed work-teams. The utilization of QCs was also increasing:managers report their use in 40% of the units. Those units feeling public pressures more acutely resort to QCs more often. QCs were also employed more often by scientific and professional workers, and their use was positively related to the extent of union involvement on various issues.

We also computed multiple use of employee participation programs and flexible job designs. As Figure 13 shows, very few units (5.8%) did not use any of the eight listed practices, while, again, very few (5%) used all of them. The largest percentage of units (22.2%) reported using six types of practices.

Figure 13.
Frequency of Workplace Innovations



VI.5 Compensation Practices

Changes in compensation strategies are considered an important element of public sector reforms. Compensation policy changes in government are responding to several, sometimes conflicting, pressures. These include the need to increase efficiency and improve the performance of government organizations, to respond to local labor market conditions, and to control public expenditures – of which public sector pay is a very substantial part. Pay reforms are shaped by the public management reforms that are taking place in various jurisdictions, which, in turn, also depend on the special difficulties each government is facing, the institutional settings, the role and power of public sector unions, and the different ideological convictions of governments.

In the section describing local managers' autonomy we saw that decision-making was most centralized in the compensation area, and that local managers reported that

compensation was the area where they had the least autonomy, and that that autonomy had even slightly declined over the last three years. This results from highly centralized decision-making in compensation in every jurisdiction. Several explanations could account for this phenomenon. First of all, high unionization at government workplaces and the centralized nature of collective bargaining lead to highly centralized decision-making in compensation. Secondly, wages represent a very high proportion of government's budget, and governments might find it most efficient to control wage costs by centralizing decision-making on compensation. The decrease in autonomy in compensation decisions might result directly from wage restraint policies that were applied for extended periods in the 1990s in all jurisdictions (Swimmer, 2000)

In order to gain a better understanding of existing compensation practices, SWIG collected data separately for managers and non-managers on the incidence of several compensation practices in government workplaces. These practices included performance appraisals based on defined performance objectives, which, while being a prerequisite for performance-related pay, is not necessarily associated with performance-based pay, merit increases, performance bonuses, or knowledge/skill-based pay. Compensating time-off was also included in the list, as it is often informally used at the workplace level for salaried employees to compensate for extra work, since these employees are seldom eligible for over-time pay.

Performance appraisals based on defined performance objectives were used quite extensively in the case of managers (85% of units) and non-managers (83.2%). This practice has been around in government workplaces for a long time. However, some of the results from our case studies show that, at least for non-managers, performance appraisals exist more on paper than in practice. Merit increases were reported in more than half of the workplace units for managers, and in 44.4% of the units for non-managers. There is a marked difference between managers and non-managers in the use of performance bonuses. While 39% of the workplaces report its use for managers, only 11% of them use it for non-managers, as several governments introduced bonus systems only for managers. Knowledge/skills-based pay is sparsely utilized for either group.

Compensating time-off is reported for non-managers more often (71%) than for managers (56.7%). The high utilization of compensating time-off shows that this method provides much needed, and, for the most part, hidden flexibility in otherwise very rigid compensation structures. It allows management to compensate their workers for extra work without using extra budgetary resources, while also providing a means of adjusting to the highs and lows in the workload.

Workplaces "outside core" government had consistently higher utilization of performance-based compensation practices than units in "core" government (Table 21). This was expected, as Crown corporations and special operating agencies seldom operate under the same human resource management and industrial relations regimes as core government.

We performed multiple regression analysis on the incidence of performance pay, including merit increases and performance bonuses for managers (Table B2 in Appendix B). It was found more often in units engaged in policy work than in units engaged in service delivery. This finding is surprising, given the centralized nature of compensation policies in government and the limited ability of policy units to measure their performance. However, the importance of policy units' work to the successful delivery of the government's agenda might explain why governments might introduce performance pay for policy unit managers more frequently than for managers of other units. Performance pay for managers was also found mostly in units with a high level of autonomy – although this causal relationship could just as well run in the opposite direction. Lastly, performance pay for managers was less likely to occur in units with a high proportion of unionized employees. This may be related to the need to avoid large discrepancies between managerial and non-managerial compensation in highly unionized units.

To summarize our results, compensation is still the area most centralized in government. From the different performance-related pay methods, merit increases for both managers and non-managers could be found in around half of the workplaces. Bonuses were

reported for managers at 39% of the units, but only at 11% of the units for non-managers. Knowledge/skill-based pay was utilized only sparsely, although it might logically accompany the use of job enrichment and multi-skilling. Compensating time off was highly popular – 71% of units use it for non-managers and 57% for managers – providing some flexibility without requiring extra budgetary resources. Performance pay, including merit increases and bonuses for managers occurred mostly in policy units, at workplaces where managers report high levels of autonomy, and at workplaces with lower unionization rates.

VI.6 Skills Requirements and Training

The changing nature of government work requires workers with new skills. This implies that the "new" government workers are more service-oriented, flexible, more highly skilled and multi-skilled.

SWIG assessed unit heads' views on the skills required for the largest occupational group in their unit. They were asked to rate on a scale of 1 to 7, the importance of different skills for members of that occupational group to carry out their jobs effectively. Six of the skills listed were technical know-how, problem-solving skills, computer skills, ability to work on teams, decision-making skills, and the ability to learn new skills. A reliability test on those six skills indicates that they do not hang together very well (Cronbach's alpha of 0.65); this suggests that the items are capturing different aspects of skills which should not be measured together. Also, no single skill can be used as a proxy for skills in general.

As Figure 14 indicates, unit heads found that all the skills listed are very important. The most highly-rated skills were: problem-solving skills, the ability to work on teams, and the ability to learn new skills. Somewhat surprisingly, the lowest-rated skills were computer skills.

Respondents whose work unit was dominated by management/administrative services were less likely to cite technical skills as very important and more likely to rate decision-making skills as highly important. By contrast, units dominated by technical workers deemed technical skills as most important. Problem-solving skills were most important for work units dominated by scientific/professional workers, while computer skills in units where technical workers were the largest occupational groups. Neither team-skills nor the ability to learn new skills differed statistically among different major occupational groups.

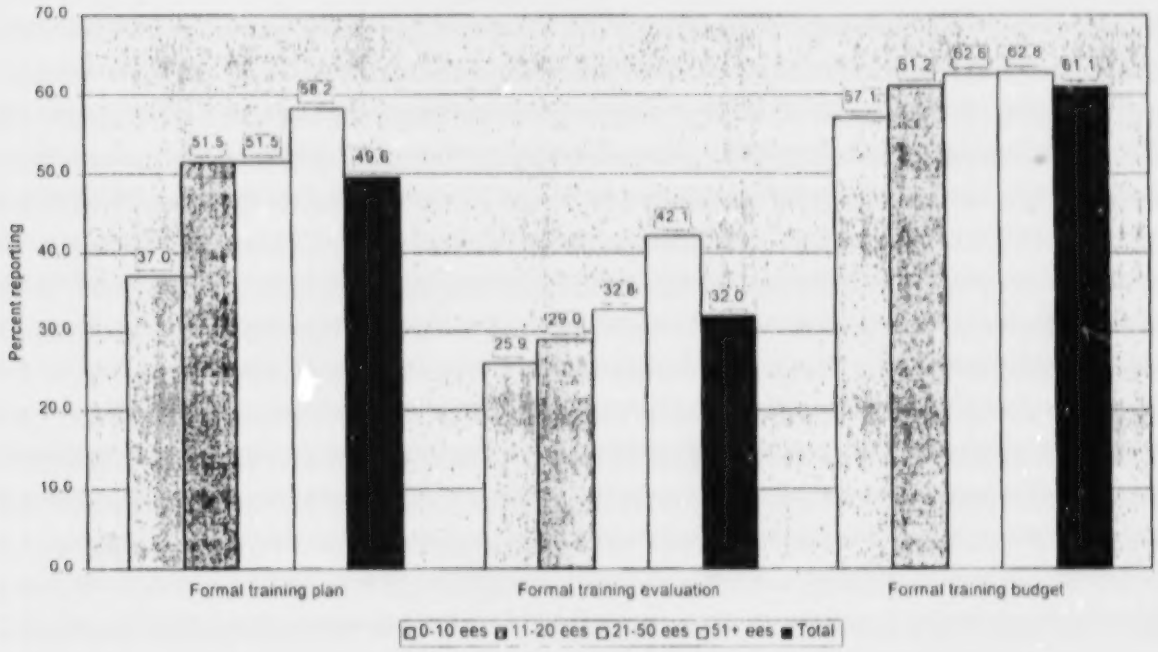
The skills deemed most important to work units were significantly related to the primary function of that unit; however, there was no relationship between team-skills and these primary functions (Table 23). Technical know-how and computer skills were most highly rated by research units, which had a high concentration of technical workers, and as least important by policy units. In contrast, problem-solving skills and decision-making skills were most important for policy units, and least important for research units – reflecting the different nature of work in these two units. Research units also rated the ability to learn new skills as very important. As expected, a statistically significant and positive relationship was found between the intensity of technological change and the importance of various skill requirements (excepting problem-solving skills). Computer skills, the ability to learn new skills, and technical know-how were correlated most highly with the intensity of technical change at the work units. Team-skills and decision-making skills had a statistically significant relationship with public accountability pressures (Table 24).

The new skills required by the changing nature of government work call for training the existing workforce in those new skills. Governments also have a limited ability to hire new workers who already possess the new skills in demand, which also means increased training of existing employees. SWIG included questions related to training: about formal training plans, training evaluation, training budgets, the number of employees trained, and several items related to specific types of training.

On average 49.6% of the work units reported having a formal training plan; 32% formally evaluate training; and 61.1% prepare formal training budgets. The larger the unit, the more likely it was that it developed training plans and conducted formal training evaluations (Figure 15). On average, 67.5% of employees received training in the previous year at the government workplaces surveyed. There were statistically significant differences in the percentage of employees trained based on the primary function of the unit: policy units trained 74% of their employees, while research and development/scientific units trained only 57.9%. As reported previously, both of these units employ a high percentage of scientific/professional employees; policy units employ mainly professionals, and research units hire mainly scientific employees. The difference in the percentage of employees trained might be explained by the fact that the focus and the issues in policy units are constantly changing, and in order to adapt to these constantly shifting government priorities policy unit employees need considerable training. In research and development/scientific units, projects last much longer and scientists already possess very high levels of education. Units providing services to the public trained 71.4% of their employees, regulatory services 66%, and corporate services 65.2%. Statistically significant differences were also found in the percentage of employees trained between "core" government units and units "outside core" government. "Core" units reported that 70% of their employees received training, while 56% of employees were trained in units "outside core" government.

Detailed information was also sought on the provision of eight different types of training, including managerial/supervisory, professional/technical, computer and other office equipment, other non-office equipment, group-decision-making/problem solving, team-building/leadership/communication, occupational health and safety, and other training. These eight items produced a relatively weak summative scale, with a Cronbach's alpha of 0.61.

Figure 15.
Incidence of Planning, Evaluation and Budgeting for Training by Size of the Unit



Almost all surveyed units reported providing training in computer and other office equipment (95.7%), closely followed by professional/technical training (91.1%). The type of training offered the least was in other office equipment – reported by 28.2% of units. From the two elements capturing soft skills training, team-building/leadership/ communication training was provided in 67% of the units, while group decision-making/problem solving training was provided by only 45.4% of the units (Table 25). The size of the workplace was correlated with the provision of different types of training. The likelihood that a work unit provided training tended to increase with the size of the

workplace for most skill types. The exceptions were computer/office equipment training, where most workplaces provided training regardless of firm size, and professional and technical training, where the amount of training provided was slightly higher in workplace with 11-20 people.

Besides reporting on the provision of different types of training, respondents were asked to rate – on a scale of 1 to 7, where 1 means greatly decreased and 7 means greatly increased – whether the level of training in those eight areas had increased or decreased in their unit compared to three years ago. Training in all areas increased slightly. Computer and office equipment training, with an average score of 4.95, increased the most, followed by professional /technical training (4.54) and team-building/leadership/ communication training (4.51). Managerial/supervisory training received an average score of 4.31; group-decision making/problem solving rated 4.24; and occupational health and safety training rated 4.21. The smallest increase was reported in other (non-office) equipment training.

SWIG also inquired about who initiated training in the work units. 30% of all training was initiated by employees; 28% by managers/directors; 30% was begun jointly; and 13% was begun at a higher level than the work unit. Statistically significant differences emerged according to who initiated this training: employees, managers/directors, both of these jointly, according to the unit's primary function (Table 26); according to the size of the unit (Table 27); and according to the unit's main occupational group (Table 28). Employees initiated the highest percentage of training in research units and policy units, while they initiated the lowest number in units that provide service to the public. This could be the result of occupational distribution in those units, as underlined by the finding that the scientific/professional employees initiate most of their own training. In this case, occupational distribution might hide the true cause of the correlation, which could be educational attainment. Unfortunately, we cannot test this hypothesis since SWIG did not collect data on the educational attainment of the workforce. However, highly skilled, more educated workers might be demanding and might more readily be granted increased responsibility and autonomy in their work, including autonomy in training decisions. At

the same time, the smaller the unit, the more likely that *employees* will initiate their own training, while the larger the unit, the more likely that *managers* initiate training. This might be the result of increasing size bringing increased bureaucracy, such that smaller units employees have more autonomy, while larger units operate under increased managerial control.

What are managers' attitudes toward skill requirements and training? For the most part, managers disagreed that their employees could adapt to change without training, and generally agreed that there was an increased need for training as jobs became more complex due to technology and other factors (Table 29). They were less certain whether hiring new employees would be essential to meeting new skill requirements.

Multivariate regression analysis was used to examine the correlates of training while controlling for all other sources of variation (Table B6 in Appendix). We found that the percentage of employees trained was related positively to three factors. First, "core" operations of the government appeared to have trained a greater proportion of their employees than employees in units "outside core" government. Possible reasons for this may include greater complexity of work within "core" operations, and hiring freezes that were frequently imposed during periods of downsizing. Second, the percentage of employees trained was also related positively to union involvement. In this case, the directionality of the relationship is not completely clear. Greater training activity may well have led to more union consultation or involvement; alternatively, more union involvement may have led to more training had the union insisted on greater worker redeployments. Lastly, the percentage of employees who were trained was higher in work units that reported more flexible job designs. This positive relationship between training and flexible job design is in keeping with what was predicted from the models discussed earlier.

After controlling for all other factors, we found soft-skills training – including training in group decision-making/problem solving – team-building/leadership/communication to be positively associated with local autonomy in making training decisions and union

involvement in training decisions. It was negatively associated with the number of years the incumbent manager was on the job. It is likely that the number of years the incumbent manager was in the job may be a proxy for the amount of change in work, which can be expected to be negatively correlated with soft-skills training. Another explanation is behavioural: new managers, eager to make a difference, may change workplace practices, which in turn might result in increased training in soft skills for their employees.

In a similar way, the amount of computer and other office equipment training was positively related to technological change and to local autonomy in making training decisions. Computer training was negatively related to the size of the workforce in the unit. This means that larger units took less computer training compared to the smaller ones, even after controlling for the function and occupational distribution of the units.

To conclude, managers felt that to carry out their jobs effectively the most important skills their employees required were problem-solving and team skills, and, more generally, the ability to learn new skills. Employee training increased slightly in all areas compared to three years ago. On average, 67.5% of employees received training. Training in computer and other office equipment was provided almost universally, while more than 90% of the units reported professional and technical training. Almost 1/3 of all training was initiated by employees themselves. Training activities at the workplace were positively related to the extent of union involvement in training decisions, to being in "core" government, as opposed to "outside core" government, and to the use of various flexible job design mechanisms at the workplace.

VII. UNION/MANAGEMENT RELATIONS

Although a lot of research in the past has focused on labour-management relations in the government at a centralized level (at which collective bargaining takes place), relatively less work has been done on the role of union/management relations at the workplace level. Our interest is in the adoption of workplace practices and innovation. In this

context, we wanted to know if labour-management relations play any role, i.e., to what extent they help or hinder the adoption of innovations that support the formation of new skills, etc.

SWIG focused on the relationship between unions and management at the workplace level. Unionization rates in the surveyed units was quite high: on average 77.7% of employees were represented by a union. Unionization rate at units which provide services to the public were the most represented (85.2%), and in regulatory services were the least (71.4%). Policy units had 78.7% of their workforce unionized, research and development/scientific units 76.4%, and corporate services units 73.2%. Nearly 82% of employees were unionized at "core" government workplaces, while only 57% were in the "outside core" government.

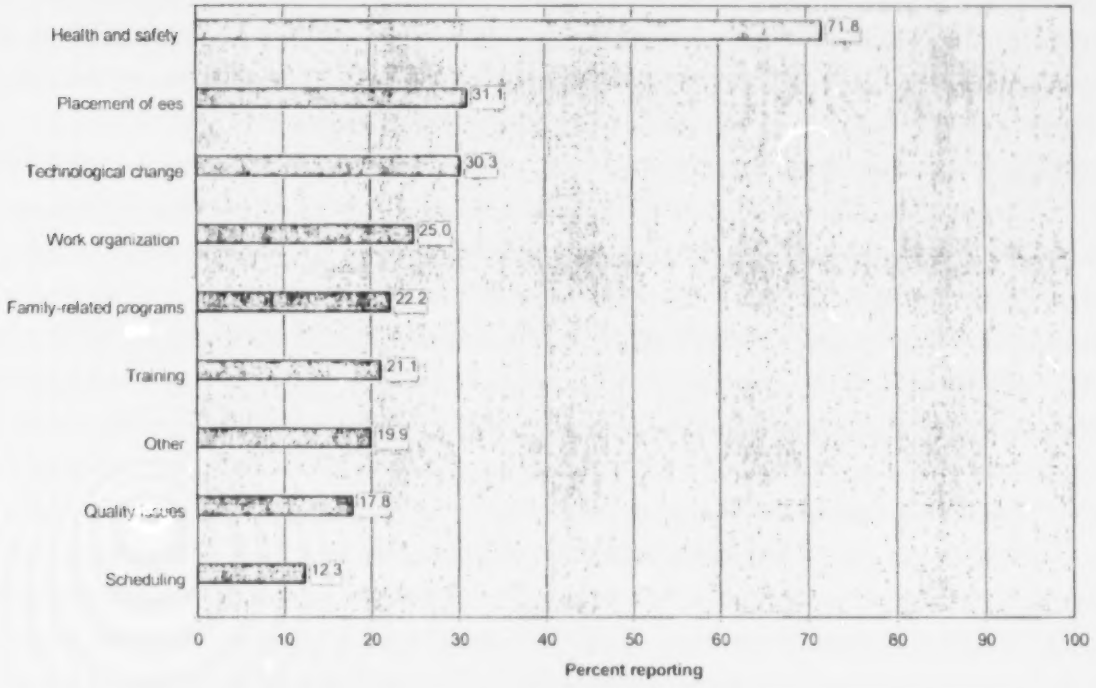
Several questions addressed the extent of union/management co-operation at the workplace level, such as frequency of meetings and the extent of the union representative's involvement in various issues, including strategic planning, budget, organizational change, technological change, decisions on employment levels, training decisions, and scheduling time off. Choices for the level of involvement ranged from "no involvement," through "union is informed," to "union participates in decision-making," and "union consent is needed."

Union/management meetings were not scheduled regularly at most units: in 70% of cases, the parties met only when there was a problem (Table 30). The union's involvement on all the issues was somewhere between no involvement to being informed. As expected, unions at the workplace level were least involved in budget decisions, and most informed about organizational change (Table 31). Our measure seems to capture most relevant areas of union/management relations at the unit level, producing a good summative scale with an alpha of 0.9.

There is a significant relationship between the extent of union involvement and the unit's primary function. In each area, units providing services to the public seem to report the

most union involvement, while regulatory units report the least. However, this might be the result of the differences in unionization rates, as public service units are the most highly unionized, while regulatory units are the least unionized.

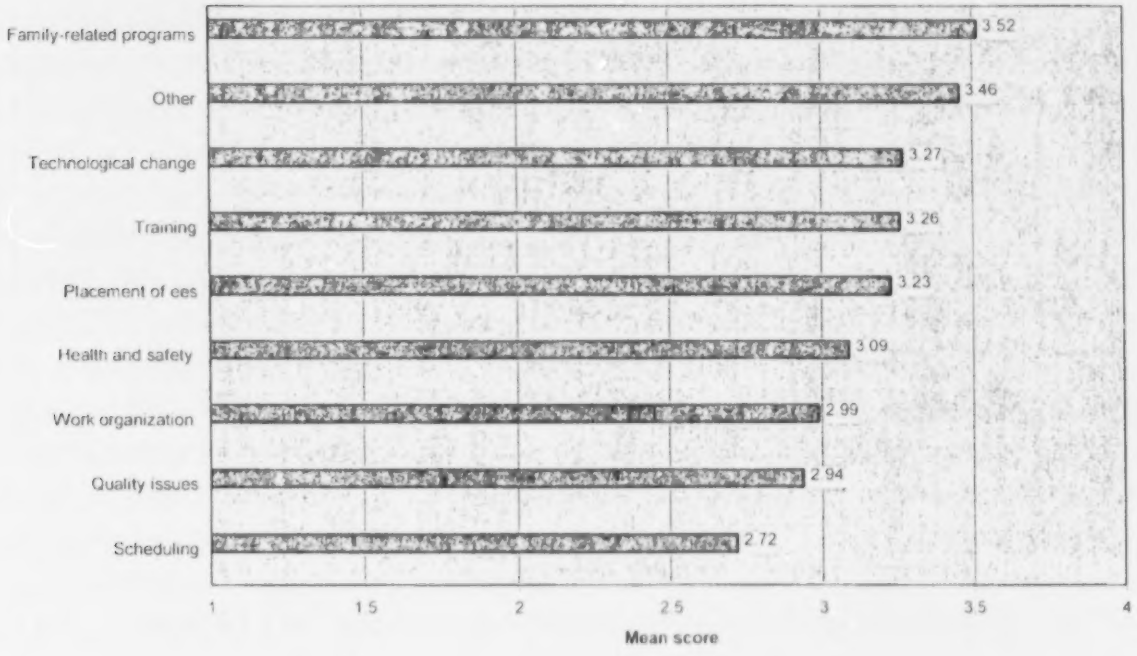
Figure 16.
Incidence of Various Joint Union-Management Initiatives



Joint union/management initiatives generally did not operate at the work unit level. Respondents noted the existence of joint initiatives, the vast majority of them dealing with health and safety – 71.8% of the units reporting – and placement of employees (31.1%) (Figure 16). Very few joint programs deal with scheduling problems (12.3%) or quality issues (17.9%). Health and safety committees were most likely mandated by legislation, and operate at the divisional level. Joint initiatives regarding placement of employees existed both at the divisional and departmental levels. Where joint initiatives on scheduling did exist, they were the most likely to operate at the branch level (Figure 17).

SWIG also inquired about the number of union and non-union grievances as an indicator of union/management relationship and employee discontent. The number of grievances was very low: on average, the number of union grievances was 0.57 per unit, and non-union grievances 0.14 per unit. There were no statistically significant differences in the number of grievances by the primary function and size of the units, nor were there any differences between the "core" and "outside core" government units.

Figure 17.
Level of Joint Union-Management Initiatives
(1= work unit; 2=branch; 3= division; 4= ministry/department)



Similarly, there were no significant differences by the content of work, volume of work and size of the workforce.

Finally, SWIG also asked about managerial attitudes towards unions. Managers generally agreed with the statement that their relationship with the union at the work unit is determined by what happens at the central level. At the same time they felt that their relationship with the union representative at their unit is excellent, co-operative, and

accommodating. They were neutral on the issue of whether or not the union representative in their unit understands how government work is changing in fundamental ways, and also on whether or not they need more flexibility than current union arrangements permit (Table 32).

Regression analysis was used to examine the correlates of the extent of union involvement controlling for all other factors (Table B5 in Appendix B). We found that the extent of union involvement was higher when budget constraints were higher. However, it was less likely to be found in regulatory and research units than in service delivery units, even after controlling for differences in their occupational structure. This points to the need to involve unions when it comes to field operations. The extent of union involvement was significantly positively related to the adoption of quality circles, and union involvement in training decisions had a statistically significant positive impact on the percentage of employees trained and on soft skill training at the workplace level.

To summarize, government workplaces are very highly unionized: on average, 78% of employees are represented by a union. Unionization is highest in units delivering services to the public and lowest in regulatory units. Significant differences exist between unionization in "core" government units (82%) and units "outside core" government (57%). There is very little union involvement at the workplace level: Meetings with management are ad hoc, and there are no joint union/management initiatives operating at that level. Managers on average report an excellent relationship with their union counterparts at the workplace level, yet they also feel that their relationship is determined by what happens at the central level. The extent of union involvement was positively related to the severity of budgetary constraints: the more budgetary pressures an organization faced, the more it involved the union(s) in workplace issues. Service delivery units had the most union involvement in all government units.

Overall it seems that managers increasingly communicate directly with their employees instead of utilizing formal union channels. Unions definitely face an uphill battle from all corners. While we have shown that unions play a limited role in workplace

restructuring, Swimmer (2000) finds that during the 1990s instead of using the collective bargaining route, governments have increasingly relied on legislation to override collective agreements. He considers it ironic that, while governments increasingly attempt to emulate private businesses in their management techniques, they have largely abandoned the basic principles of the private sector model of collective bargaining.

VIII. FUTURE CHALLENGES

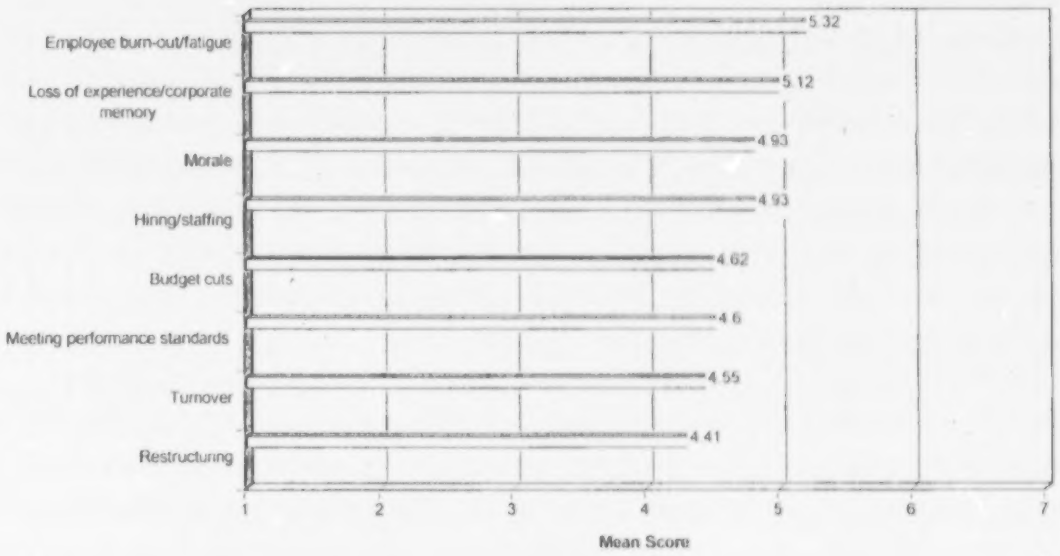
Respondents were asked to rate on a scale of 1 to 7 the extent to which various issues would be a challenge (1- no challenge; 7 - major challenge) for their units in the next three years. Issues listed were hiring/staffing; budget cuts; turnover; morale; restructuring; meeting performance standards; employee burnout and fatigue; and loss of experience/corporate memory.

Managers felt that all these listed issues would pose a challenge for them. However, they clearly identified human resource issues as the most challenging, including employee burn-out/fatigue, loss of experience/corporate memory, morale and hiring/staffing. They might have felt that either the restructuring period was over, or that they had mastered the art of restructuring, as they rated restructuring the least challenging (Figure 18). Our measure produced a good summative scale, with a Cronbach's alpha of 0.8.

Factor analysis revealed the existence of two distinct group of challenges: one which we identified as focusing on the human resource challenges of building the "future workforce," comprising hiring/staffing, turnover, and loss of experience/corporate memory. The other group may be called "survival" issues, which include restructuring, morale, meeting performance standards, employee burnout and fatigue. Each components produced an acceptable summative scale, with Cronbach's alpha of 0.77 and 0.72 respectively (Table 33). As a result, we created composite variables from them, named "future" and "survival," and tested their correlation to workforce change and the importance of different environmental pressures. "Future" was significantly correlated with past changes in the workforce; changes in the volume of work, budget constraints,

shifting government priorities, technological change, and public accountability. "Survival" was also statistically significantly correlated with these variables, except its correlation was weak with changes in the workforce and public accountability (Table 34).

Figure 18.
Ranking of Future Challenges
(1=not a challenge; 4=somewhat of a challenge; 7=major challenge)



IX. SUMMARY OF RESULTS

IX.1 Learning from the Case Studies

To supplement the workplace survey, five case studies were conducted to develop holistic stories of workplace restructuring initiatives. The sites included: new technology and quality-driven redesign of aeronautical charts publishing in the federal Ministry of Natural Resources (MNR), the introduction of industry self-management (ISM) at the Ontario Ministry of Consumer and Commercial Relations (MCCR), the integration of corporate services functions in the Justice Sector (JS) in Ontario, and the outsourcing of engineering design at Alberta Transportation and Utilities (ATU).

Two of the five case studies are linked. The case at MCCR describes the application of ISM and its impact on the changing nature of work. It is accompanied by an in-depth analysis of one of the newly created "spin-off" organizations, the Technical Standards and Safety Authority (TSSA). TSSA was included in the study because "spin-off" organizations are frequently the site of significant workplace change and can offer considerable insight into restructuring within the government.

The case studies represent three of the major components of NPM identified by Kernaghan (1997): (1) reduction of government activities by privatization and outsourcing: MCCR, ATU; (2) creation of new forms of organizations: TSSA; and (3) new approaches to management: MNR, JS. It is also clear from these case studies that the different NPM strategies are not employed in isolation, but are used in combination. Privatization and outsourcing of government functions at MCCR and ATU are accompanied by efficiency improvements of the remaining tasks, while downsizing and efficiency improvements occur simultaneously at MNR and the Justice Sector.

Appendix C summarizes key attributes and findings from the case studies. All restructuring initiatives studied were driven by central budget cuts. The Program Review initiative of the federal Liberal government and the strong commitment of the Alberta and the Ontario Progressive Conservative governments to reducing the size of government and improving its efficiency were the main *drivers* for change at the case study sites. At the same time, technological advances acted as *enablers* of the organizational changes reviewed. In the case of MNR, severe budget cuts imposed on the unit coincided with the advent of new digital imaging technology, allowing the unit to publish aeronautical charts with less personnel at lower costs. Centrally determined, government-wide reductions in administration expenses forced two justice sector ministries in Ontario to review and amalgamate their backroom services, while new computer technologies enabled the concurrent decentralization of some corporate functions to clients.

In terms of the changing nature of work, outsourcing at MCCR and ATU replaced public service delivery of regulatory, enforcement and engineering design tasks with *contract administration, monitoring and reviewing functions*. The JS project shows a movement in corporate services from a transactional, clerical type of work to a more *advisory, professional type of work*. At each site, strategic and business planning activities increased together with a renewed customer focus, which reflect NPM principles appearing as government priorities in all three governments.

The corresponding changes in skill requirements point to a *movement from lower-level skills to higher-level skills*. This can be clearly seen in the case of MCCR and the Justice Sector in Ontario, where processing and clerical skills were replaced by financial, advisory and contract monitoring skills. There was also no movement from higher-skill jobs to lower-skill ones at MNR and ATU; at MNR craftwork was replaced by computer skills, while at ATU new contract management and leadership skills were required in addition to engineering skills. The new skills are in high demand at all case study sites, together with communication and negotiation skills, team skills, and decision-making abilities. Some of the new skill requirements are linked to the changing workplace practices—such as the use of self-managed work groups, quality circles and problem solving teams reported at MNR and MCCR. The necessity of "do more with less" which has typified all government workplaces in the 1990s, also increased the need, as reported in all case sites, for multi-skilling, job enlargement, and job enrichment.

The severe budget cuts which led to restructuring resulted in substantial reductions in employment at all case study sites. However, with the exception of ATU, very few employees faced involuntary lay-offs. At MNR, attrition, generous early retirement and severance packages were offered and accepted. At MCCR, with the creation of the TSSA all affected employees were offered employment. The Ministry also made efforts to find employment for affected workers in other parts of the public service or with the new organizations. The Ontario Government and OPSEU negotiated an enhanced severance package, and a "reasonable effort" requirement binding the government to make efforts securing employment for affected workers which came into play both at MCCR and in

JS. As private sector engineering design capacities were underdeveloped in Alberta, many ATU employees found employment in the emerging private sector. The human resources professional at ATU took up a brokering role on behalf of affected employees, working hard to find employment for them in other government departments or the private sector.

In all case study sites, management stepped up its efforts to communicate directly with employees. Newsletters were published, informal bag lunches and regular staff meetings were held, and bulletin boards were set up to inform employees of organizational developments. However, employees and their representatives felt that these communication efforts were still wanting. Management at all sites indicated a continuous commitment to keeping these communication channels open, further improving them and creating new ones.

Government departments had a limited ability to hire employees with new skill sets. Hiring new employees competent in the new digital imaging technology at MNR was required by the large-scale technological change, and extensive retirements made such hiring possible. The use of revolving funds, which allows the unit to keep the revenues collected, provided funding for some new positions. MNR was also able to recruit people through the Geomatics Professional Development Program, which places engineers on 6 months assignments. At other case study sites, newly created positions were filled mainly from within the civil service. The new contract management consultant positions at JS were funded in this manner.

The new skill requirements brought increased emphasis on training for existing employees. All case study sites increased training for their employees. However, training assumed strategic importance only at MNR, where it was an essential element of the ISO 9000 implementation process, and at JS, where a training strategy was developed based on the new skill requirements of the re-engineered corporate processes. As all "fat" was cut out from the engineering design monitoring function at ATU, cross-training became essential to managing unforeseen contingencies. At several case study sites,

employees expressed concern that training was being driven by immediate work demands to the exclusion of career development needs.

Compensation practices changed the least, except at TSSA and ATU. In all three governments, compensation policies are centralized. Compensation for bargaining unit employees is driven by their respective collective agreements, which are negotiated centrally. The pay-for-performance system, in the form of performance bonuses, has been instituted for executive ranks only in the Ontario and federal governments. In Alberta, an achievement bonus was established for executives and managers. However, ATU decided to distribute an across-the-board lump sum payment to both opted-out and excluded groups – which include engineers – and to bargaining unit employees as well. ATU experienced retention and hiring difficulties at the established wage rates, and instituted "modifiers" in order to retain and attract qualified applicants. TSSA, which is independent of government and where employees lost union representation due to legislative provision, introduced completely new compensation practices. These include a new job evaluation system, broad banding, and salary adjustments to the market rate, and a new individual, performance-based incentive plan for all employees.

Performance measures were utilized at most sites for evaluating unit performance. These measures included both output measures – such as response times to consumer inquiries (at MCCR), and volume of the inspection activity of elevator inspectors (at TSSA) – and outcome measures, such as injury statistics of elevators (at TSSA), client satisfaction with purchasing services (Justice Sector), and collision rates on provincial highways (at ATU). There was no indication that the performance bonus of executives was linked to these unit performance measures.

With the exception of TSSA, most employees in the case study sites were represented by unions. In the case of TSSA, due to existing labour legislation, unions lost their successor rights for representing employees of the newly created organization. In all cases, the role of the unions was limited to ensuring that due processes in labour adjustments were followed. At MCCR, management set up a bipartite Negotiations

Committee as a liaison forum on personnel issues related to the introduction of ISM. In JS, the Ministry Employment Relations Committee was used to share information with the union on the reorganization after management had made decisions. Unions did not participate and were not consulted in the major restructuring decisions. Employees generally considered unions quite ineffectual in the restructuring process. Union/management relationships at the workplace level were largely non-existent.

In summary, the restructuring initiatives were driven primarily by severe budget cuts. Technological advances further enabled these changes. We saw significant changes in the nature of the work carried out by the various government departments, such as the move from direct service delivery to policy formulation and increasing emphasis on outputs and outcomes in the case of MCCR, JS and ATU. Government workplaces became more results-oriented, putting increasing emphasis on measuring performance and tracking the costs and benefits of services provided.

The changing nature of government work, in turn, required people with different skills: skills in developing policies and guidelines for decentralization of decision-making, and skills in performance measurement, contract management and other indirect methods of control. Communication, negotiation, team and leadership skills became more prominent. Our case studies confirmed the general trend of moving to a higher-skilled, albeit much smaller, core government workforce. While the workplaces had limited ability to hire workers with the new skills, increased emphasis was placed on training existing employees. Direct communication with employees increased in order to manage the impact on workers of restructuring. At all sites except TSSA, the restructuring resulted in significant employment reductions. The unions' role was limited to ensuring that due processes were followed in downsizing. Union/management relationships were generally confined to the Ministry level, and were almost non-existent at the workplace level. The use of flexible job design mechanisms also increased somewhat, including multi-skilling, self-directed work teams, job enrichment and job enlargement. Compensation practices changed the least, mainly because of the centralized nature of collective bargaining. TSSA is the main exception in this regard, where the new

organizational independence from government led to changes in compensation practices. It seems that increased autonomy at the workplace level leads to more innovative human resource practices. This is one of the major challenges that governments face: how to allow more autonomy in HRM at the workplace level.

Although management considered every site a "success," in each case, with the exception of TSSA, complex HRM issues were raised. Significant downsizing coupled with voluntary exit initiatives resulted in loss of corporate memory. Problems were reported regarding succession planning, while the new flattened organizational structures often limited promotion opportunities for existing employees. Staff morale was reported to be low at all affected government workplaces. These issues provide a continuing challenge for management. Unions also need to rethink their role. In order to remain relevant and serve their members better, there might be a need to broaden their involvement in the day-to-day operations at the workplace level so they can play a more strategic, proactive role in the further restructuring that is sure to follow.

IX.2 Testing the Model using Regression Analysis

The descriptive analysis presented in this report was followed by multivariate analysis in the form of several regressions designed to test the model in a variety of ways. These results have been mentioned briefly at the end of each section.

In this section, we take a summary view of all the regression results to take stock of the learning that arises from these analyses. These results are summarized in Table B8 of Appendix B. Each regression tested the net impact of a series of explanatory factors on the workplace practices that were measured in this survey. These practices fall into four groups: flexible work, employee involvement, performance/compensation, and training. The explanatory factors have also been grouped into four categories: external factors, context, nature of work, and other workplace practices.

External Factors

These results lend support to the model in which we posited a relationship between external pressures and workplace practices. Controlling for all other factors, budget constraints appeared to have a significant positive impact on adoption of practices requiring employee involvement – such as teams, quality circles, information sharing and union involvement. Similarly, public accountability appeared to foster the adoption of teams and quality programs. Lastly, units reporting a use of formal performance measures were significantly more likely to report that government priorities led them to use such performance measures.

Contextual Factors

A number of contextual variables such as work unit size, autonomy, technological change and the level of unionization were also found to be significantly related to the adoption of a number of workplace practices. As shown in Table 34, autonomy in decision-making at the unit level was found to be the most popular explanatory factor. Such autonomy was positively related to the adoption of teams, performance pay for managers, soft-skills training and technical training. This provides strong support for the workplace model discussed earlier, in which greater autonomy for work units is a key component of the new workplace.

Unit size was found to be negatively related to technical training and teams, while being positively related to the use of formal performance measures. The interpretation of results on size is a bit problematic for two reasons. First, size can be a proxy for many factors such as task complexity, technology and formalization, among others. Unless other measures are available to isolate the precise effects it is hard to tell which of these proxies is applicable in a given case. Second, our survey restricted the sample to unit sizes between 5-100. Thus, the full variance within the population is not reflected in our sample. Given these caveats, the negative effects of size on technical training may be interpreted as resulting from larger units being less technology-intensive. Similarly, the

negative impact on teams may be interpreted in terms of larger units being more complex and hence less amenable to innovations. The negative effect of size on the use of formal performance measures may also signal the greater complexity of work in larger units.

Technological change was related positively, as expected, to computer training. Lastly, unit-level unionization rates were negatively related to performance pay for managers. Although the exact linkage between these variables is not immediately clear, we speculate that performance pay for managers may have been avoided in units with high unionization rates because it may have had an impact on union members in a way that is unacceptable or unappealing to unions.

Nature of Work

Since our model posited that external factors have changed the nature of government work, a number of questions in the survey were about the nature of work. Several of these variables were significantly related to the adoption of certain workplace practices. We found that "core" government units reported a significantly higher proportion of trained employees than units outside the "core."

As discussed earlier, service delivery units are hypothesized to be significantly different from policy or corporate services units. This difference shows up in three sets of regression results. Service delivery work units reported significantly fewer teams, greater union involvement, and a lower incidence of performance pay for managers than policy or corporate services work units. Some of these signs are not consistent with the notion that service delivery is a production-like function where one is likely to see a higher incidence of adoption of innovative workplace practices.

These results suggest that precisely because service delivery is a production-like function, which is likely to be spun off, there is less pressure to adopt innovations such as teams and performance pay for managers. These results may need to be investigated further and replicated elsewhere before they can be taken as definitive. Meanwhile, it is necessary to

develop a dual view of how the nature of work in service delivery units influences adoption of innovative workplace practices: it could foster or discourage innovation, depending on the assumptions made about the future of the service delivery function within the government.

The volume of work was significantly and positively related to flexible job design. This result supports the hypothesized relationship within our model. It suggests that flexible job designs are more likely to be adopted by units that are experiencing increases in volume of work at a time of personnel cuts.

There were two items in the survey that touched on measurability of work. Units were asked if they were measuring costs and benefits of their programs. Using the Wilson (1989) typology, units were also asked if either their output or outcome, or both, were measurable. Both these variables were positively related to the use of formal unit performance measures. This result suggests that units whose work was amenable to measurement were more likely to have their performance measured. This is a key feature of the New Public Management (NPM) that appears prominently in our survey. Flexible job designs were also more likely where formal performance measures were being used.

The percentage of scientific and professional employees, a proxy for the nature of work, was positively related to the adoption of teams and quality circles. It points to a relationship between knowledge work and the its positive association with new forms of work organization.

Other Workplace Practices

Several empirical studies of workplace practices have shown that various workplace innovations may not be occurring randomly but rather in certain clusters or "bundles" (Betcherman et al 1996; Pils 1996; Ichniowski et al 1996). We tested separately for such clustering (see note at the end of this section). In the context of regression analysis, we wanted to examine if certain practices occurred within the context of certain other

practices. Accordingly, we entered a number of other work place practices in the regressions to test for their impact.

Most of these results are consistent with expectations. Flexible job design was positively related to the proportion of employees trained within the unit. Self-directed work teams were more likely to be found where flexible job designs were present. The presence of quality circles was associated with information sharing in general, and with greater union involvement. Union involvement in training decisions was positively associated with more people trained and with more soft-skills training. Lastly, managerial and supervisory training was positively associated with more sharing of information.

Summary

This section has reported on the most significant, both statistically and policy-wise, results of our regression analysis. These results show strong support for the model used to develop the survey. Briefly, our evidence shows that external factors such as budget constraints, public accountability and government priorities had a significant impact on the adoption of innovative workplace practices. Contextual factors such as work unit size, autonomy, technological change and the level of unionization also influenced the choice of workplace practices. The changing nature of government work had its own impact. Whether the work unit was a "core" government operation or a service delivery unit appeared to make a difference. The volume of work, the measurability of work, and the knowledge content of the work performed were significant factors as well.

These results support the view developed earlier in our model:

- Many of the changes occurring in government work are driven by external priorities.
- Significant changes are occurring in the nature of government work which, in turn, have influenced the adoption of workplace practices: a move to measure performance, the increasing volume of work (and the related downsizing), the divestiture of service delivery functions and the resulting rising concentration of knowledge work (measured by the percentage of scientific and professional employees).

- Public managers have increasingly adopted the flexible job designs that became popular in the private sector. This has meant greater emphasis on training and employee involvement policies.

X. DISCUSSION AND IMPLICATIONS

Questions of both policy and theory in the area of innovative workplace practices have generally centered on the following four issues:

1. Is there an emerging new paradigm that guides the adoption of certain innovations in the workplace?
2. What is the incidence of adoption of such innovative workplace practices?
3. What external, contextual and organizational factors influence the adoption of these workplace practices?
4. What is the impact of these innovations on workplace outcomes such as productivity, quality, safety, and other labour-related outcomes such as absenteeism, turnover, grievances, etc.?

Each of these questions is discussed below in light of the evidence presented earlier.

Emerging New Paradigm for Human Resources in the Government

There is strong evidence in this study to suggest a significant shift in how some governments are organizing their work, and in the workplaces that accomplish their goals. The evidence points to a significant transformation of the government workplace. This transformation is clearly underway, but far from complete. The Survey of Workplace in Government (SWIG) and the accompanying case studies provide a first glimpse of the extent of change and related policies and practices. The results are indicative of the paradigm that is driving these changes. The contours of change are derived from, but not limited to, the collection of ideas known as New Public Management (NPM). A major indicator of NPM as a driving force is that managers

identified "increased emphasis on results" as the most significant outside pressure on the work of their units.

In Ontario, Alberta, and, to a significant extent, in the federal government, a variety of restructuring plans have been formally adopted. These plans have formed the basis for workplace change. Although it is not easy or fair to generalize them all into one paradigm, it is helpful to articulate one approach that has driven many of the changes observed in our study. Under this paradigm, governments are trying to substantially redefine their role in service delivery. In one vision, eventually, no government department would be engaged directly in service delivery. Services would be delivered by private vendors or not-for-profit agencies. Government would focus more exclusively on its role of policy research, analysis and formulation. However, since government would still have accountability for services to the public, there would be a growing cadre of managers responsible for negotiating and managing service contracts with external vendors or agencies. Contract management, therefore, would be an area in which governments will need to develop new skills.

At the workplace level, this paradigm implies a more flexible, adaptable, autonomous and well-trained work unit led by a manager whose own salary to some extent is contingent on achieving work unit goals and objectives. Although we are not there yet, the evidence in this study points to the emergence of such a paradigm and its transformational impact on a significant number of units. The case studies provide examples of leading-edge change in the government. They are not yet representative of the typical workplace, but they provide an invaluable lesson in our attempts to create and successfully manage the future. This case evidence, more than the survey evidence, provides a more holistic picture of the change efforts underway in government. We need to understand this process better, and its impact, if we are to build on the strengths of this approach and minimize or eliminate the weaknesses inherent in all large-scale restructuring.

The Incidence of Innovative Adoption

The findings from our survey and case studies are informative about the extent of change in the government workplace. Not every workplace is transformed to the same extent. Change is slow in some places and faster in others. Descriptive results on the incidence of workplace innovations point to a significant transformation. A methodological problem with this study, as with any cross-sectional study undertaken for the first time, is one of placing the results on incidence in a comparative context. We do not have a historical benchmark for assessing increases or decreases in incidence over time. Neither do we have data from precisely the same survey conducted elsewhere. What we do have are data from *similar* questions asked in other private sector surveys. This comparison points strongly to a workplace transformation within the government.

In one area, in employee involvement forums, such as teams and quality circles, we found the incidence to be higher than the frequencies reported in other private sector surveys (Betcherman et. al 1996). This result was somewhat unexpected, given the reputation for lack of change within government bureaucracies. However, there is a corporate structure within government that can facilitate diffusion of innovations once a policy direction is adopted across government. No wide-ranging private sector survey measures workplace innovations in a similar context. To be comparable, a private sector survey would have to be done within a single large corporation governed by a single board of directors. Private sector surveys span many organizations, and thus capture the widely varying policies of many governing structures that have no direct connections to each other. In our survey we went to five governments, each with a measure of control over its work units unmatched in any private sector sample. Thus, a higher incidence of certain practices that have become government policy can be expected.

Both Ontario and Alberta are good illustrations of the government's corporate ability to adopt a certain restructuring approach or policy and to then diffuse it relatively quickly and easily throughout their far-flung domain. Such policies are transmitted to all managers as part of corporate communications, training seminars, policy workshops and

other such meetings. Many practices follow the formalization of budgetary and resource constraints imposed uniformly across government departments. This ability to diffuse new practices is the other side of the coin of inflexibility that governments are often accused of. The same corporate structure that accounted for inflexibility and slow change is now seen mobilized for rapid change.

Factors Influencing Workplace Change

There are a host of factors theorized to influence the adoption of workplace innovations. Government ideology and political platforms are one source of variation -- but there are other factors responsible. At the micro- or organizational level, one source of variation is the nature of work. Our five-way classification of work into policy, corporate services, service delivery (i.e., services to the public), research and development, and regulatory units, is one clue that needs further investigation. The paradigm of workplace change that drives this study is influenced heavily by the production paradigm in the private sector first observed in auto and other secondary manufacturing industries. Thus, it would appear that wherever government work is production-like (e.g., service delivery), the probability of workplace change occurring along the lines of our model is relatively higher.

It is also likely that the appeal of this change paradigm has led to the restructuring of traditionally non-production-type work into a production-like work organization. For example, some regulatory activity and corporate services may be more decentralized, better measured, and more managers' pay may be based on performance. At the margin, there are some regulatory and corporate services units in our sample that display characteristics of the production paradigm: higher unit autonomy, more training, more flexible job designs, teams and contingent pay for managers.

Implications for Government Policy

The evidence in our survey clearly establishes the emerging directions in government restructuring. Many units have undergone a complete transformation. Many others are as yet untouched. A large number lie somewhere in between. Our case studies and interviews with government personnel suggest that while some governments (e.g., Ontario and Alberta) have clearly articulated their strategies for restructuring spending and program areas, no government in our sample has done the same for articulating a clear workplace strategy at least at a government-wide level.[14] This may explain why workplace changes across departments, even in those governments that have a clear plan for restructuring, are so uneven. Our evidence suggests the need to make explicit an agenda for change and innovation at the workplace level. It suggests that managers should be given a clear mandate for workplace change and provided with incentives to adopt workplace innovations. Unless restructuring plans and spending cuts are coupled with an explicit strategy for *working smarter*, many departments and their employees would end up either *working harder* or working for a government with greatly diminished scope.

Our survey evidence establishes external factors such as budgetary pressures as one of the drivers of workplace change. By the year 2000, most governments in Canada would have either balanced their budgets or they would be well on their way to do so. Once the budgetary pressures dissipate it is likely that the motivation to reform workplace practices would also diminish. This would be an undesirable outcome from many perspectives. Any complacency about government efficiency in the early 2000s would likely bring harsher cuts when the economy slows during a possible future recession. Second, the momentum and skills developed by government organizations in the late 1990s around workplace change would be gradually lost. This would argue that there is an urgent need to redouble efforts around workplace change even as budgetary pressures diminish or disappear in the new decade.

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[14] There are many instances of a well-articulated workplace strategy in individual cases but none at a strategic level that would be directed across all departments and units.

One area where we found the workplace change paradigm to be lacking in its application within the government is that of appropriate incentives for managers. In the private sector, the paradigm of work unit autonomy, flexibility, training for new skills, and employee involvement is assumed to be implemented by a motivated leader working closely with an engaged and involved workforce. Within the government, managerial compensation systems are too centralized, formalized and, consequently, too rigid to meet the needs of a vigorous program of workplace change. The incentives for managers to fully engage in workplace reform are largely missing. If governments wish to accelerate the agenda for workplace change they would need to address the issue of introducing appropriate managerial incentives.

Our evidence also shows that unions have played a minimal role in workplace restructuring and reform. Some of the difficulties in creating a dialogue with unions are political and historical in nature. However, in looking ahead it is important to engage unions fully if the employer wants workers to be involved and committed to the new workplace. The absence of union participation puts workplace changes in a mixed light for workers. Some are engaged while others are apprehensive of the changes. This anxiety increases with the lack of a union presence. The anxiety is highest when their union directly opposes certain workplace reforms. If the government can successfully engage the union in a win-win dialogue over workplace change, the diffusion of workplace innovations and their effectiveness can be expected to increase significantly.

Lastly, governments need to develop national and international benchmarks to gauge their progress on workplace change. Traditionally, government work has not been subject to measurements and benchmarks. However, better technology and methods make it possible to track both inputs and outputs in almost all areas of government work. Adoption of workplace innovations and restructuring of workplaces cannot be done effectively without creating a fully integrated process of setting performance benchmarks, monitoring and measuring this performance, and a proactive policy to adopt workplace reforms that help achieve those benchmarks.

Although episodic studies are conducted by a variety of agencies on government work, the cause of workplace change would be greatly helped if a dedicated research cell could be created to study the needs of the government workplace. In other countries, a variety of models have been used in the past. The first Clinton administration established the Office of the Workplace within the Department of Labor. Sweden pioneered the creation of the Arbetslivzentrum in the 1960s. In Canada, workplace research has been carried out by the Canada Labour and Business Centre (formerly the Canada Labour Market and Productivity Centre), the former Economic Council of Canada, Canadian Policy and Research Networks, etc. But none of these organizations has had the resources, the mandate, or the interest to focus exclusively on the government workplace. Hence, it is important to consider creating a research cell either within the government (possibly within the Public Service Commissions) or outside it in an agency like the CPRN, to study workplace innovations in government workplaces on an ongoing basis.

Implications for Union Policy

From a union's perspective, the most revealing finding in this study is that the role of unions in workplace change has ranged from almost nil to very minor. Management has conceived and directed workplace change at all stages, from formulating strategy to implementing it. There are many reasons for the lack of a union role at the decentralized level of the workplace. Some unions have voluntarily disavowed any participation in restructuring issues because of their philosophical opposition to a radical redefinition of government work. Somewhat related to this issue is the fact that most government employee unions have only a weak presence at the workplace level. Not every work unit has its own union representative. Many units have to share a union representative with other units. Traditionally, these representatives (usually called union stewards) are concerned primarily with grievances. When significant restructuring takes place they are either not consulted by the manager or they are asked by the union leadership not to participate in any meetings where restructuring plans are being discussed. Most unions

have focused their energies on worker rights, such as notice period, redeployment, re-training and severance pay.

Given our evidence on the nature and extent of change in government workplaces, it may be argued that unions should take steps to become more involved. Changes in workplace practices have a significant impact on workers' quality of work life. The lack of union involvement allows the process of change to be managed unilaterally by management. If unions want to be more effective in giving voice to their members about these changes, they will have to get more proactively engaged in the process of workplace change.

To increase their involvement in workplace restructuring issues unions will have to develop a greater presence at the work unit level. They will also have to develop a proactive policy on emerging workplace paradigms of greater autonomy, flexibility and employee involvement. Even if unions did want an enhanced role in workplace change issues, it is not clear that many managers would agree to give them a greater say. Under the labour laws presently governing labour-management relations in the government sector, issues of workplace change remain firmly under management prerogative. Yet, in practice, a small number of union locals and unit managers have developed dialogues over such issues. Under the law, managers are permitted but not required to involve unions.

Restrictions or absence of encouragement from the law can be a barrier, but need not be, to more union/management dialogue over workplace change. Evidence from the private sector and other countries shows that constructive workplace change benefits all parties to the employment relationship. Thus, it would be in the interest of all Canadians to ensure that our government workplaces adopt innovative work practices, and that they do so with the full participation and support of both employees and managers.

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APPENDIX A. TABLES OF DETAILED STATISTICS

Table 1. Breakdown of Telephone Contacts

Contact Results	Federal	Provincial
a. Total Sample	1,363	1,724
b. Numbers not in service	91	71
c. Duplicates	15	23
d. Left public service	20	27
e. Total Attrition (b+c+d)	126	121
f. Total Functional Sample (a-e)	1,237	1,603
g. No answers	135	350
h. Number called more than 15 times without success	25	2
i. Unavailable	51	30
j. Took a referral, either a manager above or below	133	218
k. Total asked f - (g+h+i+j)	893	1,003
l. Refusals	49	40
m. Co-operative contacts (k-l)	844	963
n. Completions	665	853
p. Disqualified, not in position for more than 6 months	179	110
r. Response Rate n/f	68%	60%

Table 2. Mail Survey Response Rates by Jurisdiction

Jurisdiction	Questionnaires Sent Out	Completed Questionnaires	Response Rate	Distribution in File
Federal	665	353	53%	44%
Nova Scotia	153	96	63%	12%
Ontario	275	125	46%	16%
Manitoba	200	104	52%	13%
Alberta	225	123	55%	15%
Total	**1,518**	**801**	**53%**	**100%**

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Table 3. Description of Response Units and Respondents

	Mean	Std. Dev.	N
Size of unit	31.03	25.72	778
Age of unit	12.65	15.81	609
Unionization rate at the unit	77.75	30.79	750
Percent of ees with more than 10 years seniority	58.7	33.0	773
Percent of ees with less than 2 years seniority	12.2	14.6	781
Age of respondent	48.20	6.00	745
Seniority on job	4.06	4.10	771
Seniority with government	19.64	8.34	771

Method: Weighted data; unionization rate and percent of employees with seniority data also weighted by size of the unit

Table 4. Comparison of Average Size and Occupational Distribution of Workforce in Surveyed Units by Function

	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig.	N
Size of unit	21.44	35.18	30.02	31.19	44.36	31.03	0.000	774
% of man/admin. Ees	14.7	12.1	22.1	16.1	14.3	17.0	0.000	758
% of scien./prof. Ees	48.2	23.2	22.7	31.1	41.7	28.0	0.000	758
% of technical ees	5.8	13.6	17.0	12.5	21.5	14.6	0.000	758
% of cler./adm. support ees	17.4	23.8	23.0	19.1	12.9	21.5	0.001	758
% of operational ees	13.9	26.0	11.7	20.2	9.5	17.0	0.000	758
% of other ees	0.2	1.3	3.4	1.0	0.2	1.9	0.014	758

Method: weighted data; occupational distribution data is also weighted by the size of the unit

Table 5. Environmental Pressures by Function of the Unit (Comparison of means)
(1=not important; 4=somewhat important; 7=extremely important)

	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig.	N
Emphasis on results	5.64	5.83	5.69	5.50	5.57	5.69	0.397	756
Budget constraints	4.80	5.56	5.49	4.80	5.62	5.34	0.000	764
Shifting govt. priorities	5.76	5.36	5.19	5.27	5.00	5.32	0.008	745
Technological change	4.55	5.22	5.32	4.78	5.22	5.11	0.000	747
Quality services	4.29	5.25	4.16	4.91	4.57	4.58	0.000	735
More services	4.20	5.09	4.03	4.73	4.60	4.45	0.000	748
Attn. to views of citizens	4.63	4.80	3.72	4.57	4.24	4.27	0.000	745
Inform citizens	4.36	4.90	3.80	4.57	3.93	4.27	0.000	740

Method: weighted data

Table 6. Results of Factor Analysis for Environmental Pressures
Factor Loadings and Variance Explained

	Component 1	Component 2
Greater emphasis on results	0.388	0.508
Budget constraints	0.040	0.728
Shifting government priorities	0.163	0.555
Technological change	0.202	0.603
Public demand for better quality services	0.825	0.246
Public demand for more services	0.833	0.191
Need to pay greater attention to views of citizens	0.865	0.142
Need to better inform citizens	0.876	0.123
Total Variance Explained (%)	38.89	20.00
Cronbach's alpha	0.8937	0.4825
N	674	

Method: Principal Component Analysis with Varimax rotation; weighted data

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Table 7. Crosstabulation of Changes in Workforce and Volume of Work 1995-1998 (units reporting)

	Changes in Volume of Work			
Changes in Workforce	Decreased	Same	Increased	Total
Decreased	39	44	221	304
Same	9	35	169	213
Increased	1	11	236	248
Total	49	90	626	765
Correlation coeff.				0.435

Method: weighted data

Table 8. Comparison of Level of Responsibility for Various HRM Decisions by Function of Unit (1=managers reporting to you; 2=yourself; 3=your imm. supervisor; 4= HR dep.; 5=central agency)

	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig.	N
Hiring/staffing	1.86	1.93	1.88	1.95	1.98	1.91	0.875	748
Job design	1.97	2.00	1.77	2.22	1.69	1.91	0.000	746
Compensation	4.28	4.14	4.12	3.99	4.16	4.14	0.572	744
Training	1.86	1.86	1.73	1.81	1.65	1.79	0.419	728
Work organization	1.92	1.80	1.69	1.75	1.58	1.76	0.005	732
Staff evaluation	1.64	1.50	1.49	1.45	1.54	1.51	0.125	730
Developing job descriptions	1.85	1.95	1.73	1.95	1.70	1.83	0.068	710

Method: weighted data

Table 9. Comparison of Level of Responsibility for Various HRM Decisions by Size of the Unit (1=managers reporting to you; 2=yourself; 3=your imm. supervisor; 4= HR dep.; 5=central agency)

	0-10 ees	11-20 ees	21-50 ees	51+ ees	Total	Sig.	N
Hiring/staffing	2.32	2.01	1.74	1.60	1.91	0.000	748
Job design	2.24	1.99	1.70	1.77	1.91	0.000	746
Compensation	4.11	4.23	4.11	4.13	4.14	0.713	744
Training	2.25	1.83	1.68	1.39	1.79	0.000	728
Work organization	2.03	1.76	1.66	1.60	1.76	0.000	732
Staff evaluation	1.99	1.56	1.34	1.19	1.51	0.000	730
Developing job descriptions	2.21	1.80	1.61	1.83	1.83	0.000	710

Method: weighted data

Table 10. Results of Factor Analysis for Change in Autonomy of Unit Head 1995-1998

	Component 1	Component 2
Staffing decisions	0.308	0.711
Classification and job design	0.264	0.736
Performance management	0.653	0.347
Compensation	1.360E-02	0.747
Training and development	0.690	0.374
Organizational change	0.552	0.537
Budgeting	0.446	0.665
Discretionary spending	0.442	0.647
Technological change	0.475	0.467
Quality	0.891	0.160
Consultation with clients	0.867	0.146
Total Variance Explained (%)	32.16	29.81
Cronbach's Alpha for Composites	0.8604	0.8261
N	702	

Method: weighted data

Table 11. Comparison of the Incidence of Various Performance Measures By Function of Unit

	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig	N
Any formal perf. Measures	33.1	58.8	47.0	53.9	51.1	48.9	0.000	760
Financial costs	44.4	68.0	59.8	66.7	67.4	60.8	0.001	735
Financial benefits	17.2	37.7	36.2	34.7	42.9	33.8	0.001	714
Able to measure outputs	45.2	73.1	65.7	67.1	78.3	65.3	0.000	761
Able to measure outcome	41.7	64.8	62.4	69.7	53.3	59.9	0.000	746

Method: weighted data

Table 12. Comparison of Use of Various Staffing Practices by Function of the Unit (Mean Score)
(1=rarely; 4=occasionally; 7=regularly)

	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig	N
Perm. Transfer or second	3.78	3.10	3.51	3.09	3.29	3.38	0.028	751
External hiring perm. ees	3.01	2.81	3.04	3.01	2.98	2.97	0.779	741
External hiring on contract	3.31	3.01	3.44	2.93	3.50	3.25	0.094	745
Subcontract or outsource	3.01	2.56	3.06	1.96	3.40	2.83	0.000	732
Increased overtime	3.97	3.54	4.04	3.54	3.47	3.81	0.032	756
Greater use of part-timers	2.39	2.77	2.55	2.62	3.09	2.63	0.193	748
Greater use of func. Flex	3.83	4.13	4.19	3.71	4.25	4.07	0.223	749
Flexible working hours	4.35	4.01	4.14	4.10	4.46	4.16	0.534	746
Working hours reduction	1.45	1.63	1.37	1.58	1.88	1.51	0.041	737
Employment reduction	2.41	2.55	2.24	2.05	3.00	2.38	0.040	724

Method: weighted data

Table 13. Strength of Relationship between Staffing Practices, Changes in Workforce, Volume of Work
(Pearson corr. coeff.)

	Changes in Workforce	Sig	N	Volume of Work	Sig	N
Permanent transfer or secondment	0.119	0.001	743	0.202	0.000	744
New external hiring permanent ees	0.209	0.000	734	0.075	0.042	734
New external hiring on contract	0.053	0.149	738	0.128	0.000	738
Subcontracting or outsourcing	-0.050	0.176	724	0.053	0.155	724
Increased overtime	0.119	0.001	748	0.258	0.000	748
Greater reliance on part-time ees	-0.065	0.079	740	0.029	0.437	740
Greater reliance on functional flexibility	-0.047	0.199	741	0.095	0.010	741
Flexible working hours	-0.049	0.181	738	0.070	0.057	738
Working hours reduction	-0.025	0.495	729	0.016	0.675	730
Employment reduction	-0.487	0.000	716	-0.128	0.001	716

Method: weighted data

Table 14. Results of Factor Analysis for Staffing Practices
Factor Loadings and Variance Explained

	Component 1	Component 2	Component 3
Permanent transfer or secondment	0.197	0.597	-0.035
New external hiring permanent ees	0.570	-0.053	-0.210
New external hiring on contract	0.695	0.062	0.205
Subcontracting or outsourcing	0.607	0.054	0.161
Increased overtime	0.555	0.316	-0.005
Greater reliance on part-time ees	0.317	0.082	0.604
Greater reliance on functional flexibility	0.034	0.701	0.091
Flexible working hours	-0.022	0.752	0.111
Working hours reduction	-0.025	0.114	0.635
Employment reduction	-0.030	-0.031	0.736
Total Variance Explained (%)	16.260	15.430	14.440
Alpha for Composites	0.497	0.478	0.440
N	643		

Method: weighted data

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Table 15. Comparison of Incidence of Flexible Job Design Programs by Importance of Technological Change (% reporting yes)

	Technological Change					
	Not important	Somewhat important	Extremely important	Total	Sig	N
Multi-skilling/ job rotation	44.4	58.7	63.3	59.5	0.012	703
Job enlargement	53.6	70.2	76.3	71.4	0.001	683
Job enrichment	52.9	66.2	78.0	70.6	0.000	673
Self-directed work teams	40.6	44.5	51.2	47.4	0.132	673

Method: weighted data

Table 16. Extent of Employee Participation in Existing Flexible Job Design Programs

	Employees participating					
	Less than 10%	11-25%	26-50%	More than 50%	Total	N
Multi-skilling/ job rotation	27.4	32.9	21.3	18.4	100.0	487.0
Job enlargement	16.8	35.2	23.9	24.1	100.0	536.0
Job enrichment	11.1	29.7	30.3	28.9	100.0	552.0
Self-directed work teams	16.3	28.7	28.3	26.7	100.0	360.0

Method: weighted data; also weighted for size of the unit

Table 17. Change in the Level of Active Participation of Non-managerial Employees in Flexible Job Design Programs 1995-1998 by Change in Content of Work (Mean) (1=much less participation now; 4=same; 7=much more participation now)

	Same kind of work, done same way	Same kind of work, done differently	Slightly different work	Very different work	Total	Sig.	N
Multi-skilling/ job rotation	4.47	4.70	4.75	4.90	4.72	0.038	630
Job enlargement	4.65	5.00	5.02	5.04	4.96	0.015	637
Job enrichment	4.49	4.94	5.00	5.20	4.94	0.000	638
Self-directed work teams	4.24	4.63	4.65	4.87	4.62	0.003	578

Method: weighted data

Table 18. Change in the Level of Active Participation of Non-managerial Employees in Flexible Job Design Programs 1995-1998 by Public Accountability (Mean) (1=much less participation now; 4=same; 7=much more participation now)

	Not important	Somewhat important	Extremely important	Total	Sig.	N
Multi-skilling/ job rotation	4.53	4.72	4.83	4.73	0.056	574
Job enlargement	4.67	4.92	5.16	4.96	0.000	582
Job enrichment	4.61	4.78	5.28	4.93	0.000	583
Self-directed work teams	4.28	4.50	4.90	4.60	0.000	525

Method: weighted data

Table 19. Extent of Employee Participation in Existing Formal Participation Programs

	Employees participating					
	Less than 10%	11-25%	26-50%	More than 50%	Total	N
Employee suggestion programs	54.2	17.6	9.0	19.3	100.0	308
Employee attitude surveys	7.7	9.2	20.5	62.6	100.0	297
Direct information sharing with employees	2.3	6.2	16.5	75.0	100.0	630
Quality circles/problem solving teams	8.2	28.2	30.4	33.2	100.0	335

Method: weighted data; also weighted for size of the unit

Table 20. Stage of Direct Information with Employees (%)

	Early planning stages (=1)	During decision-making(=2)	After decision made(=3)	Total	N	Mean
Strategic planning	64.5	23.8	11.8	100.0	633	1.47
Budget development	45.2	32.4	22.4	100.0	507	1.77
Changes in organizational structure	46.5	33.2	20.3	100.0	640	1.74
Work reorganization	64.6	28.8	6.6	100.0	663	1.42
Technological change	67.9	21.8	10.3	100.0	653	1.42
Workforce reductions	37.8	27.9	34.3	100.0	525	1.97
Quality issues	75.1	23.1	1.8	100.0	636	1.27
Other	77.7	18.1	4.2	100.0	71	1.26
Cronbach's Alpha			0.8971			

Method: weighted data

Table 21. Compensation Practices for Non-Managers by Core and Periphery (% reporting)

	Core	Periphery	Total	Sig.	N
Performance appraisals based on defined performance objectives	82.2	87.7	83.2	0.131	612
Merit increases	42.4	53.7	44.5	0.021	606
Performance bonuses	8.3	23.5	11.2	0.000	581
Knowledge/skill-based pay	11.4	22.9	13.5	0.001	581
Compensating time-off	71.3	69.9	71.0	0.754	599

Method: weighted data

Table 22. Managers' Rating of Importance of Various Skills by Main Occupational Group in Unit (Mean score)
(1= not at all important; 4= somewhat important; 7= extremely important)

Skills	Mgmt/admin	Scientific/ professional	Technical	Clerical/ admin. support	Operational	Other	Total	Sig.	N
Technical	5.25	5.88	6.58	5.61	5.62	5.32	5.77	0.000	767
Problem-solving	6.43	6.50	6.13	5.41	6.13	6.42	6.29	0.000	760
Computer	5.39	5.66	6.03	5.80	5.24	5.10	5.60	0.000	762
Team	6.41	6.19	6.12	6.17	6.41	6.32	6.25	0.044	769
Decision-making	6.19	6.08	5.84	5.14	5.99	6.23	5.97	0.000	770
Able to learn	6.32	6.23	6.20	6.04	6.08	6.05	6.20	0.153	762

Method: weighted data; also weighted for size of the unit

Table 23. Comparison of Skill Requirements by Function on Unit (Mean Score)
(1= not at all important; 4= somewhat important; 7= extremely important)

Skills	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig.	N
Technical	5.42	5.72	5.84	5.90	6.26	5.77	0.001	770
Problem-solving	6.52	6.23	6.27	6.19	6.17	6.29	0.035	763
Computer	5.48	5.53	5.71	5.33	5.96	5.60	0.004	765
Team	6.31	6.29	6.24	6.01	6.37	6.25	0.158	771
Decision-making	6.11	6.09	5.85	6.05	5.80	5.97	0.014	772
Able to learn	6.18	6.28	6.22	5.84	6.31	6.20	0.003	765

Method: weighted data

Table 24. Relationship between Skill Requirements, Technological Change and Public Accountability Pressures (Pearson corr. Coeff.)

Skills	Tech Change	Sig	N	Public account.	Sig	N
Technical	0.168	0.000	741	-0.017	0.658	696
Problem-solving	0.002	0.947	733	0.020	0.595	693
Computer	0.273	0.000	734	0.023	0.545	691
Team	0.086	0.019	741	0.151	0.000	696
Decision-making	0.072	0.050	742	0.123	0.001	697
Able to learn	0.185	0.000	734	0.064	0.091	691

Method: weighted data

Table 25. Provision of Different Types of Training by Size of Unit (% reporting yes)

	0-10 ees	11-20 ees	21-50 ees	51+ ees	Total	Sig	N
Managerial/supervisory	54.9	71.9	78.2	89.9	73.7	0.000	754
Professional/technical	85.2	94.4	91.9	92.1	91.1	0.018	757
Computer and other office equipment	94.3	95.9	95.7	97.1	95.7	0.721	744
Other (non-office) equipment	17.6	24.9	28.9	43.8	28.2	0.000	721
Group decision-making/problem solving	32.3	44.5	49.6	53.4	45.4	0.001	733
Team-building/leadership/ communication	53.1	65.6	71.6	76.6	67.0	0.000	743
Occupational health and safety	26.8	40.2	47.8	56.4	43.0	0.000	730
Other training	32.3	34.1	44.5	50.0	39.5	0.026	479

Method: weighted data

Table 26. Comparison of Training Initiation by Function of the Unit (Mean %)

	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig	N
Employees	35.6	25.8	31.2	28.0	37.0	30.1	0.001	763
Managers, directors of unit	23.3	30.1	25.8	34.7	26.3	27.6	0.003	763
Jointly	25.7	30.5	31.2	24.8	26.7	29.5	0.112	763
Higher level than work unit	15.3	13.7	12.0	12.5	10.0	12.8	0.309	763

Method: weighted data; also weighted for size of the unit

Table 27. Training Initiation by Size of Unit (Mean %)

	0-10 ees	11-20 ees	21-50 ees	51+ ees	Total	Sig
Employees	38.4	34.8	34.1	24.8	30.1	0.000
Managers, directors of unit	17.1	25.1	26.2	30.7	27.6	0.000
Jointly	29.6	27.3	27.3	31.7	29.5	0.141
Higher level than work unit	15.0	12.8	12.5	12.8	12.8	0.845

Method: weighted data; also weighted for the size of the unit

Table 28. Training Initiation by Main Occupational Group in the Unit (Mean %)

	Mgmt/admin	Scientific/ professional	Technical	Clerical/ admin. Support	Operational	Other	Total	Sig
Employees	31.5	35.4	25.3	25.2	25.4	26.5	30.1	0.000
Managers, directors of unit	22	22.6	33.5	32.8	33.3	31.8	27.5	0.000
Jointly	33.5	31	28.9	26	26.3	28.6	29.5	0.180
Higher level than work unit	13	11	12.2	15.9	14.9	13.2	12.8	0.139
N							760	

Method: weighted data

Table 29. Managerial Attitudes Toward Training
(1=strongly disagree; 4=neither; 7=strongly agree)

	Mean	N
Employees are able to adapt to change without formal training	3.55	776
There is an increased need for training	5.70	770
Lot of training in our unit is initiated by our employees	4.52	769
Hiring new employees will be essential for new skill requirements to be met	4.15	768

Method: weighted data

Table 30. Frequency of Formal Meetings with Union

	% reporting
Daily	0.4
Weekly	0.4
Bi-weekly	0.2
Monthly	4.4
Quarterly	8.8
Semi-annually	3.4
Annually	1.2
Less often	11.6
Only when there is a problem	69.7
Total	100.0
Total N	635
Mean	8.11

Method: weighted data

Table 31. Extent of Union Involvement in Various Issues by Function of the Unit
(1=union not involved; 2=union is informed; 3=union participates in decision-making
4=union consent is needed)

	Policy	Service to public	Corporate services	Regulatory services	R&D/ Scientific	All	Sig.	N
Strategic Planning	1.18	1.32	1.21	1.12	1.14	1.23	0.045	632
Budget	1.08	1.21	1.10	1.06	1.07	1.12	0.023	622
Organizational change	1.38	1.64	1.48	1.25	1.26	1.47	0.000	620
Technological change	1.27	1.46	1.46	1.19	1.26	1.39	0.005	613
Employment level decision	1.29	1.48	1.31	1.11	1.34	1.33	0.000	621
Training decisions	1.19	1.31	1.19	1.09	1.11	1.21	0.043	627
Scheduling time off	1.14	1.28	1.13	1.04	1.11	1.16	0.009	622

Method: weighted data

Table 32. Managerial Attitudes Toward the Union
(1=strongly disagree ; 4=neither; 7=strongly agree)

	Mean	N
I will need more flexibility from my workers to adjust to the ever-changing environment		
Than is now possible under the current union arrangements	4.2	630
My relationship with the union at the work unit level is determined by what happens		
At the central level	4.82	617
The union rep in my unit understands how government work is changing in fundamental ways	4.37	583
My relationship with the union rep in my unit is excellent, cooperative, and accommodating	4.75	570

Method: weighted data

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Table 33. Results of Factor Analysis of Future Challenges Factor Loadings and Variance Explained

	Component 1	Component 2
Hiring/staffing	0.159	0.751
Budget cuts	0.577	0.188
Turnover	0.184	0.826
Morale	0.748	0.315
Restructuring	0.797	0.071
Meeting performance standards	0.694	0.151
Employee burn-out/fatigue	0.591	0.404
Loss of experience/corporate memory	0.265	0.729
Variance explained (%)	31.100	26.300
Cronbach's Alpha for Composites	0.769	0.723
N	713	

Method: weighted data

Table 34. Correlation between Future Challenges, Various Changes at the Workplace and Environmental Pressures (Pearson corr. coeff.)

	Future			Survival		
	Corr coeff	Sig	N	Corr coeff	Sig	N
Changes in workforce	-0.161	0.000	722	0.004	0.913	740
Changes in volume of work	0.132	0.000	724	0.139	0.000	740
Budget constraints	0.383	0.000	719	0.168	0.000	735
Shifting government priorities	0.257	0.000	700	0.174	0.000	718
Technological change	0.209	0.000	703	0.113	0.000	717
Public accountability	0.162	0.000	661	0.072	0.062	667

Method: weighted data

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APPENDIX B. TABLES OF REGRESSION RESULTS

Table B1. Summary of Regression Results for Changing Nature of Work

Model	Changes in Workforce	Changes in Volume of Work
Independent Variables	*Dependent Variables*	
Budget constraint	-.275***	-.025
Shifting government priorities	-.023	.093**
Technological change	-.029	-.010
Emphasis on results	.056	.147***
Public accountability	.136***	.147***
Size of unit	-.005	-.051
Core government	.100***	.039
Policy unit	.074*	.080*
Corporate unit	.115**	.171***
Regulatory unit	.017	.023
Research unit	-.044	.021
R Square	.107	.093
Number of Observations	666	667

* Significant at the .10 level ** Significant at the .05 level *** Significant at the .01 level

Table B2. Summary of Regression Results for Performance Pay & Performance Measurement

Model	PRP for Managers	Use of Formal Performance Measures
Independent Variables	*Dependent Variables*	
Budget constraint	-.020	-.0190
Shifting government priorities	.048	.2308**
Technological change	-.082	.1106
Emphasis on results	.107*	.2597**
Public accountability	.002	.0671
Change in volume of work	-.049	-.1050
Change in content of work	.021	-.2022
Change in size of workforce	-.060	-.1027
Autonomy level	.122**	-.2775
Size of unit	.014	.0135**
Core government	-.054	-.2089
Policy unit	.150**	-.1977
Corporate unit	-.037	.0676
Regulatory unit	.013	.0731
Research unit	-.063	.7394
% scientific/professional ees to all ees	.015	.0034
% of technical ees to all ees	-.064	-.0035
% of operational ees to all ees	-.040	.0029
Formal performance measures	.054	
Performance pay for managers		.4347
Combined costs & benefits Measured	.095*	.4825***
Output/outcome measurability	-.027	.7361***
Unionization rate	-.151***	.0009
Extent of union involvement	.018	.0893
R Square	.119	
Number of Observations	374	329

* Significant at the .10 level ** Significant at the .05 level *** Significant at the .01 level

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Table B3. Summary of Regression Results for Staffing Practices

Model	Expansion Practices	Flexible Practices	Reduction Practices
Independent Variables	*Dependent Variables*		
Budget constraint	.006	.049	.095**
Shifting government priorities	.092**	.031	-.020
Technological change	-.007	.113***	.027
Emphasis on results	.021	.028	.025
Public accountability	.144***	.057	.058
Change in volume of work	.129***	.090**	.047
Change in content of work	.066	.118***	.032
Change in size of workforce	.012	-.011	-.278***
Size of unit	.108***	.128***	.115***
Core government	-.087**	.039	-.040
Policy unit	.148***	.057	-.010
Corporate unit	.252***	.088*	-.084*
Regulatory unit	.016	.000	-.035
Research unit	.096**	.042	.045
R Square	.130	.100	.137
Number of Observations	599	618	611

* Significant at the .10 level ** Significant at the .05 level *** Significant at the .01 level

Table B4. Summary of Regression Results for the Utilization of Various Workplace Practices

Model	Self-directed work teams	Quality Circles	Flexible Job Designs
Independent Variables	*Dependent Variables*		
Budget constraint	.114**	.034	.026
Shifting government priorities	-.031	.017	.046
Technological change	.098*	-.052	-.029
Emphasis on results	-.099*	.042	.084
Public accountability	.140**	.127*	.053
Change in volume of work	-.004	.102*	.182***
Change in content of work	.088*	.055	.094*
Change in size of workforce	.053	-.038	-.121*
Autonomy of local manager	.006	.096*	.123**
Size of unit	-.105**	-.030	-.037
Core government	.015	-.075	-.042
Policy unit	-.142**	-.033	.006
Corporate unit	-.149**	-.055	-.002
Regulatory unit	-.087	.045	-.003
Research unit	-.034	-.058	.108*
% scientific/professional ees to all ees	.142**	.134**	.033
% of technical ees to all ees	.076	.065	.080
% of operational ees to all ees	-.037	.029	.065
% of ees > 2 yrs seniority			.026
% of ees < 10 yrs seniority			.039
Self-directed teams			.477***
Years as head of unit			.005
Age of unit			.013
Age of manager			-.004
Seniority with government			.040
Output/outcome measurability	-.092*	.033	.129**
Unionization rate	-.070	-.050	.087
Extent of union involvement	.027	.115**	-.073
R Square	0.119	.094	.361
Number of Observations	396	402	285

Source: Estimates by the authors, based on the data from the Survey of Workplace Issues in Government
* Significant at the .10 level ** Significant at the .05 level *** Significant at the .01 level

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Table B5. Summary of Regression Results for Extent of Union Involvement & Info Sharing

Model	Extent of Union Involvement	Use of Direct Information Sharing
Independent Variables	*Dependent Variables*	
Budget constraint	.181***	.132**
Shifting government priorities	.045	-.049
Technological change	-.038	-.021
Emphasis on results	.078	.071
Public accountability	-.015	-.048
Change in volume of work	-.089	.010
Change in content of work	.096*	-.024
Change in size of workforce	-.045	.049
Autonomy level	-.069	.051
Size of unit	.042	-.037
Core government	-.069	-.053
Policy unit	-.063	034
Corporate unit	-.045	-.067
Regulatory unit	-.144***	-.102*
Research unit	-.107**	.049
% scientific/professional ees to all ees	-.122*	-.095
% of technical ees to all ees	.003	-.057
% of operational ees to all ees	.059	-.066
Relationship w union rep	.100*	
Relationship w/ union rep at work	-.079	
Self-Directed work teams		.082
Quality circles/Problem-solving teams		.248***
Managerial/supervisory training		124**
Output/outcome measurability	.024	-.025
Unionization rate	.047	-.047
Extent of union involvement		-.063
R Square	.152	.161
Number of Observations	379	359

* Significant at the .10 level ** Significant at the .05 level *** Significant at the .01 level

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Table B6. Summary of Regression Results for Training

Model	% of Employees Trained	Soft Skill Training	Computer Training
Independent Variables	*Dependent Variables*		
Budget constraint	-.083	-.040	.069
Shifting government priorities	-.028	.047	-.006
Technological change	.003	.058	.168***
Emphasis on results	.064	.011	-.033
Public accountability	-.053	-.079	.001
Change in volume of work	.090	.058	.069
Change in content of work	.051	.061	.085*
Change in size of workforce	.120*	.011	-.131**
Local Autonomy in Training & Development	081	.140**	.167***
Size of unit	.024	.035	-.007
Core government	.156***	.001	-.019
Policy unit	-.036	-.019	-.035
Corporate unit	009	-.060	-.041
Regulatory unit	010	-.085	-.026
Research unit	-.067	-.080	.012
% scientific/professional ees to all ees	.001	-.040	-.003
% of technical ees to all ees	-.060	.008	-.073
% of operational ees to all ees	-.035	-.044	-.092
Union involvement in training decisions	126**	140**	.069
Flexible job designs	.212***	.103	
Quality circles/ Problem solving teams	-.003	099	
Self-Directed Teams		.063	
% of ees > 2 yrs seniority		.045	
% of ees < 10yrs seniority		-.073	
Years as head of unit		-.162**	
Age of unit		.015	
Staff Arrangements	-.068		
Output/outcome measurability	.040	-.014	.085*
Unionization rate	.036	-.071	-.023
R Square	.116	.150	.119
Number of Observations	346	295	467

* Significant at the .10 level ** Significant at the .05 level *** Significant at the .01 level

Table B7: Summary of Regression Results

Workplace Practice	Constraint			Context				Nature of Work					Workplace Practices				
	Budget Constraints	Public Accountability	Government Priorities	Work Unit Size	Work Unit Autonomy	Tech Change	Unionization	Core vs. periphery	Service Delivery	Volume of work	Measurability of Work	% Scientific & prof. emp.	Flexible Job Design	Self-directed Work Teams	Quality Circles	Mngl. & Sup. Training	Union Involvement
Flexible Work:																	
Flexible Job Design					+					+	+			+			
Self-directed Work Teams	+	+		-					+			+					
Employee Involvement:																	
Quality Circles		+										+					+
Information Sharing	+														+	+	
Union Involvement	+								+								
Performance & Compensation:																	
Use of formal			+	+							+						
Performance pay for managers					+		-		-						+	+	
Training																	
Percent of employees trained								+					+				+
Soft-skills training					+												+
Technical training				-	+	+											

APPENDIX C. SUMMARY TABLE OF FINDINGS FROM CASE STUDIES

Name of Organization And Work Unit	*Ministry of Natural Resources (Federal)* Acreonautical and Technical Services	*Ministry of Consumer and Commercial Relations (Ontario)* Marketplace Standards and Services	*Technical Standards and Safety Authority(Ontario)* Elevating and Amusement Devices Safety	*Ministry of Attorney General & Ministry of Solicitor General and Correctional Services (Ontario)* Strategic Procurement	*Alberta Transportation and Utilities (Alberta)* Engineering Design process
Description of Work of Unit	Publishing aeronautical charts to ensure safe navigation in Canadian airspace	Industry regulation; liaison with new administrative authorities	Establishing and enforcing safety standards	strategic procurement; mail services; print operations	Monitoring and reviewing engineering designs
Brief Description of Change	Restructuring; introduction of digital imaging technology; ISO 9000; National Quality Institute Assessment; use of revolving fund; activity-based budgeting	Introduction of industry self-management in areas of consumer protection and public safety	New not-for-profit administrative authority created by MCCR	Integration of corporate services between two ministries by process simplification and standardization; decentralization of procurement through the introduction of intra-net, E-commerce, and increased local purchasing authority; service planning	Complete outsourcing of engineering design; creation of new monitoring and reviewing functions
Major Environmental Pressures	Budget cuts (55%); industry developments, technological change; threat of outside competition	Budget cuts shifting government priorities	Public demand for more and better quality services	Budget cuts (30%) technological change	Budget cuts shifting government priorities
Changes in Nature of Work	Change from conventional (photo-mechanical) to digital technology; integrated focus on quality, including detailed documentation of every job; Increased customer focus	Public service delivery replaced by contract monitoring of independent agencies	Inspection activity based on risk assessment; change to program-oriented work organization; strategic and business planning; increased customer focus	Decentralization of purchasing accompanied by new advisory function; service planning; move from transactional work to more advisory type of work; increased customer focus	Engineering design work replaced by monitoring and reviewing of design work carried out by the private sector
New Skill Requirements	Digital imaging; increased quality focus	Liaison, monitoring, financial and contract management skills	Customer focus; communication skills; team skills; innovative disposition; performance management skills	Analytical and problem solving skills; communication and negotiation skills; move from controlling the clients to serving them	Contract management skills; benchmarking, team skills, client focus, leadership and decision-making skills
Employment Impact	Decrease from over 100 employees to 55; currently at 97	ISM reduced employment in affected areas of MCCR from 393 to 80	Hired all MCCR staff –250 employees – from affected program area, division has 66 ees	30% reduction in positions – 60 positions eliminated ; 36 positions currently at procurement	Reduction from 333 positions to 73

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Training	Retraining for new technology; training essential for implementing ISO 9000	New skills acquired by hiring from within government	Training budget 2 ½ percent of salary budget, focus remains on ensuring technical competence	Training in new technology, teamwork; problem solving and customer services; development of training strategy and annual training plans; set-up of Education Committee	Training high priority; focus on new skill requirements for contract management and monitoring, increased cross-training
Employee Communication	Limited during implementation; ISO 9000 process requires formalized two-way communication	Increased communication related to restructuring through information sessions, access to job advertisements, salary and benefit schedules.	Creation of Staff Association Creation of inspector's working group	Weekly service integration meetings of executives; regular staff meetings, monthly newsletter; bulleting boards; establishment of "Change Council"	Employee suggestion program; employee attitude surveys; information sharing on organizational and technological change on early planning stages; on strategic planning and budget development after decision made
Compensation Practices	Employee compensation based on collective agreement; revolving fund allows hiring new employees	Collective agreement directs employee compensation; central performance based incentive system for executives	New job evaluation system; broad-banding; salaries adjusted to market rate; introduction of individual performance-based incentive plan for all employees	Employee compensation according to collective agreement; central performance bonus system for executives	Employee compensation based on collective agreement; use of "modifiers" to address specific retention problems; performance based variable pay for all employees
Workplace Innovations	Creation of Quality Council	Introduction of formal employee suggestion program; multi-skilling	Self-managed work groups for administrative and clerical workers; multi-skilling of inspectors	Job enlargement; job enrichment	Multi-skilling
Labour-Management Relations	Low-key approach; part of workforce declared essential; restructuring resulted in 1 union de-certification; when function returned to government certification regained	Creation of bi-partite "Negotiations Committee," a liaison forum on personnel issues related to introduction of ISM; union's role limited to ensuring due processes in lay-offs	Bill 7 eliminated successor rights for unions; Staff Association – information device for management	Information sharing with union at Ministry Employment Relations Committee after decisions made; union's role limited to ensuring due process in lay-offs	Union focused on due processes in restructuring;
Performance Measurement	Both output and outcome measures e.g., quality, on-time delivery, cost of production	Long existing output and outcome measures e.g., response times and number of cases won by investigators	Use of both output and safety outcome measures, e.g., turnaround times; volume of inspection activity; serious injuries	Standard turnaround time; client satisfaction	Total design costs as % of total project cost; number of redesign within 10 years; cost increases; collision rates; % of projects delivered on time;
Key HRM Issues	Loss of corporate memory; extensive retirements in next five years; low employee morale limited promotion opportunities	Loss of corporate memory; loss of technical expertise; "survivor" syndrome	Need for better communication with employees; improved training and career options; better link performance, pay and recognition	Staff morale; uncertainty due to continuous restructuring	Succession planning; stagnation of current employees' skills; problems around role clarity;

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